Dr. *BROOK TAYLOR*'s METHOD of PERSPECTIVE compared, *&c.*

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Dr. *BROOK TAYLOR*'s
METHOD of
PERSPECTIVE,

COMPARED
With the EXAMPLES lately publiſh'd on this SUBJECT
as *SIRIGATTI*'s, by *ISAAC WARE*, Eſq;

BEING
A PARALLEL between thoſe two *Methods* of PERSPECTIVE.

In which the ſuperior Excellence of *TAYLOR*'s is ſhewn by ſelf-evident Principles, or ſimple Inſpection.

Illuſtrated with above Forty EXAMPLES on *Copper Plates*; and the whole
DRAWN and ENGRAVED

By Mr. KIRBY,

K.

Deſigner in PERSPECTIVE to his *Royal Highneſs* the PRINCE of *WALES*; and Author of a Book, entitled Dr. *Brook Taylor*'s *Method of Perſpective made Eaſy*, &c.

LONDON:
Printed for the AUTHOR, and ſold by *R.* and *J. Dodſley* in *Pall-Mall*,
T. Longman in *Pater-Noſter-Row*, and *H. Piers* near the *Bull* and *Gate*,
High-Holbourn.

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PREFACE.

THE Principles of Perſpective, which were publiſhed by Dr. BROOK TAYLOR, having been ſo univerſally received and admired, both by Perſons concerned in the *Arts* of *Deſign*, and by *Mathematicians*; and the Advantage, which might probably ariſe from making his Schemes more intelligible to the generality of Readers, were ſufficient Inducements for my undertaking the Taſk: which, added to the Encouragement that was given me by the moſt eminent Artiſts in this Kingdom, made me indefatigable in the Purſuit; and I was determined not to ſpare either Pains or Expence in the Execution.

WHILE I was thus employed, the high Opinion, which I had long conceived of Dr. *Taylor's* Knowledge in Perſpective, became every Day more ſtrengthened and confirmed, ſo that his Book upon this Subject, began now to appear to me as an invaluable Treaſure, and as one of thoſe Performances that reflects Honour upon the Britiſh Nation.

THESE were ſome of the pleaſing Reflections that I had ~~cheriſhed in favour of our ingenious Author, and ſome of~~ the Hopes which I had nouriſhed in regard to myſelf, upon a Preſumption of making him more generally known and underſtood. But whether from the unfaſhionable Sin of being a little partial in favour of our own Countrymen, or from any other Cauſe, many Pens were immediately employed upon the ſame Subject; and although, in general, they endeavoured to eſtabliſh quite different Principles, yet none, that I know of, have attempted to overturn the Syſtem of Dr. *Taylor*, nor have even aimed at diſproving any one of his Propoſitions: However, there have been Declaimers againſt this his ingenious and very uſeful Performance; and ſo there was againſt the Philoſophy of his Friend and Cotemporary, Sir *Iſaac Newton*; but in both Caſes the Oppoſition was made by Men either blind with Prejudice, or whoſe Want of Capacity permitted them not to underſtand the Things they cenſured.

To vindicate therefore the Character of our Author; to do juſtice to the Artiſts of our own § Country; and to give a general Anſwer to ſuch as have lately wrote upon Perſpective, without having firſt grounded themſelves in the Principles of the Art; is the Deſign of this Pamphlet: And ſince this Theory has been amply treated of before, I ſhall now appeal to the Senſes, and by comparing Examples together, leave the Eyes to be the principal Judges as to this Matter.

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§ I hope no one will infer from hence that I am endeavouring to reflect upon any foreign Artiſt; nothing is farther from my Intention. I know, and eſteem, many of thoſe Gentlemen, for their Genius, Candour, and other excellent Qualifications.

But it may be neceſſary to give the Reaſons that induced me to fix on *Sirigatti's* Perſpective as that, with which I chuſe to compare our Method. This choice may partly be accounted for from the following Paragraph, which made it's Appearance in the *Public Advertiſer*, of *March* 14. 1755, about a Week before the ſecond Edition of my Book was ready for the Subſcribers. The Paragraph runs thus. " The *beſt* Author that *ever* treated on Per-" ſpective is *now* tranſlating from the *Italian Language* " into *Engliſh*, and the Examples will be drawn, engrav-" ed, and the whole together publiſhed, by John *Ware*, " Eſq; which Work, when completed, will *undoubt-" edly* be the moſt *uſeful* of its kind; and its Rules, al-" though *elegant*, are the *ſimpleſt*, and therefore *eaſier* to " be underſtood than any thing hitherto *publiſhed* in the " *Engliſh* Language.

Now this Paragraph promiſes much, nay ſo very much that Modeſty, as well as Prudence, forbad putting the right Name of the Author to it. And whether Mr. *Iſaac Ware* was concerned or not in 'Squire *John Ware's* Addreſs to the Public, is a Matter not worth enquiring into; ſince Mr. *Iſaac Ware* advertiſed almoſt immediately after this, his Intention of ‡ " publiſhing a Tranſlation of a *learned* " *Italian Author* (upon Perſpective) into *Engliſh*, much " *eaſier* to be underſtood than *any* thing that has hitherto " *appeared* in the *Engliſh Language*." And he (Mr. *Iſaac Ware*) has accordingly publiſhed his propoſed Tranſlation: Which being now before the Public, under the

Title

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‡ See *Public Advertiſer*, *March*, 21, 1755.

Title of *Sirigatti's Perſpective*, with a very pompous Preface to recommend the "Excellence and Utility" of this Performance, and with † invidious Reflections upon the "Works of many of our eminent Artiſts," I have therefore thought this an additional Reaſon for my taking particular Notice of Mr. *Ware* and this his favourite Author; and hope to be juſtified by every impartial Reader.

Now the firſt Queſtion, which naturally ariſes to me upon this Occaſion is, whether this Work of *Sirigatti* is really ſo uſeful and ſo valuable as Mr. *Ware* would perſuade us to think it is; or whether it is only an obſolete and exploded Method of Perſpective, revived and retailed, under the greateſt Circumſtances of Error and Confuſion?

THAT the Principles of Perſpective by *Sirigatti* are not to be depended upon as correct, will appear from their being thoroughly diveſted of every mathematical Foundation; and that his Rules are not to be ſo very eaſily applied to Practice as is pretended, will be evident to any one, who ſhall make the Experiment: For from the Multiplicity of Lines and Points, which muſt unavoidably be made uſe of, what Attention and what Labour will it not require to repreſent even a ſingle Object, ſuch as the Baſe or Capital of a Column, by the Rules of Perſpective; and after a moſt tedious Operation, the Repreſentation thus produced, will be liable to the greateſt Errors, by blundering through a long mechanical Progreſſion, inſtead of drawing each Line at once to its proper vaniſhing Point; as will be ſhewn in the Courſe of this Work?

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† "The Subject (Perſpective) it concerns is the Buſineſs but of a "few Perſons, and amongſt the greateſt Part of thoſe, it is practiſed "rather by Rote than Rule; if we may have leave to ſpeak freely, he "who examines the Works of many of our Artiſts in this Reſpect, will "find Reaſon to ſay, thoſe who have been eminent have never wanted more Aſſiſtance than they have in this Particular. *Vide* Mr. "*Ware's* Preface, Page 5.

And that this Method, which *Sirigatti* calls his own, hath not been buried in Oblivion for 131 § Years, will alſo appear to any one, who ſhall take the trouble of examining the Works of *Andrea Pozzo*, who publiſhed a large Volume in Folio in 1700, upon the very ſame Principles.

But Mr. *Ware* ſeems to betray ſome little Want of Erudition, becauſe this very Way of reducing Objects into Perſpective, which he has publiſhed as *Sirigatti's*, was, in all Probability, the Invention of *Vignola*, a famous Italian Architect; who was born † 89 Years before *Sirigatti's* Book made it's Appearance. Beſides, a Work of this kind, and by *Vignola*, muſt certainly be known, and till another and better Method was diſcovered, would without doubt be eſteemed; and we find that theſe very Rules of Perſpective were publiſhed at Rome with learned Annotations, by *Ignatius Danti* in 1583. Is it not therefore a little ſtrange, that one, who is gleaning out all the uſeful

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§ *Sirigatti's* Book was publiſhed in 1625.

† See the Life of *Vignola* by *Daviler*, who ſays that *Vignola* died in July, 1573, aged 66; and *Sirigatti's* Book was not publiſhed till 1596.

Wiſdom from the antient as well as modern Architects, to tranſmit it in a complete Body to Poſterity, ſhould thus unluckily transfer that, which is (for aught he knows) the indiſputable Right of a famous Architect, to a piratical Author, who was at leaſt an incorrect, injudicious and an unfair Publiſher of another's Labours?

I HAVE ſaid above that this Method of *Vignola* was, without doubt, eſteemed, till another and better was diſcovered. Now this we aſſert hath been done by Dr. *Taylor*; for his Treatiſes, though ſhort, are nevertheleſs of univerſal Extent, and ſo very true, that every Problem, nay every ſingle Example, will ſtand the Teſt of the ſtricteſt mathematical Examination. And whether the Repreſentations of Objects can be produced by his Manner with greater Eaſe and Facility than by *Vignola's*, *Sirigatti's*, or *Pozzo's*, may ſufficiently appear by the following Examples: To which I refer my Readers.

BEFORE I conclude, it may be neceſſary to obſerve, that I have given every Rule in *Sirigatti's* Book, though not every Example; but have not explained the Method, by which my own Figures are produced; becauſe this could not be done either in Juſtice to my Subſcribers, or with Safety to my own Reputation: However, I have in each Operation, given every Line and Point neceſſary to perform it.

I HAVE alſo added a Print, repreſenting a true Perſpective View of the *Horſe Guards* and *Treaſury* in *St. James's Park*, as a finiſhed Example; with a few occaſional

Remarks upon the *falſe* Perſpective of a *Print* lately publiſhed as a *correct* View of thoſe Buildings; which is the propereſt Example I could think of by way of Illuſtration. And beſides, this View, drawn on the Principles of *Sirigatti*, having been already produced by one, who is a great Declaimer againſt thoſe of Dr. *Taylor*; he may perhaps, on comparing, perceive his Miſtake, and may probably be prevailed upon, for the future, to think, or at leaſt to ſpeak, more modeſtly, of what he doth not ſeem to underſtand; and he may alſo poſſibly be induced to confeſs (if it be only ſoftly to himſelf) that the greateſt human Self-ſufficiency, is not abſolutely Infallible!

WERE I diſpoſed to remark in this Place all the Errors of Perſpective, which did occur to me in reading Mr. *Ware*'s Tranſlation, I ſhould tire the Patience of my Readers, and exceed my intended Brevity: I ſhall therefore only obſerve farther, that I have pointed out the moſt palpable Miſtakes in this injudicious and haſty Performance, have ſhewn how to correct them, and ſubmit the whole to the Candour of the Public.

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A
PARALLEL
BETWEEN THE
TWO METHODS of PERSPECTIVE,
PUBLISH'D BY
Dr. *BROOK TAYLOR*, and *SIRIGATTI*, &c.

SIRIGATTI begins his Introduction to Perſpective, with obſerving, that there are two principal Ends in all Sciences, *viz. Speculation* and *Practice*; the firſt of theſe, he tells us, is without doubt more noble than the latter: Yet ſince the Practice has a Tendency to promote the moſt good by its public Utility, it ſhould therefore be preferred to that private Gratification, which might be given to the Mind by its bare ſpeculative Knowledge in any Art or Science.

AFTER this, he informs us, that having finiſhed his mathematical Studies, he applied himſelf to that of Perſpective for the ſake of univerſal Utility and Conveniency; *viz.* That he might produce ſomething, which would be particularly uſeful to thoſe, who apply themſelves to the Practice of this Art.

HE next acquaints us, that notwithſtanding Perſpective has been taught with great Ingenuity by others, yet its Practice was attended with inſuperable Difficulties, eſpecially in the *foreſhortening* of Figures; which would require ſo many Lines and Angles, that the deſired End could not be acquired without great Patience and conſiderable Labour. Theſe Conſiderations, he ſays, were the Inducements that ſet him to work upon *diſcovering* a Rule, which ſhould facilitate theſe Operations; and having diſcovered it, he judged it but juſt and reaſonable to publiſh it.

THE firſt Plate of *Sirigatti* contains ſome few geometrical Terms, *viz. A Point, a Line, parallel Lines, Superficies, Perpendicular, right Angle, obtuſe Angle, acute Angle*; and the following geometrical Figures, *viz. An equilateral Triangle, equicrural Triangle, a ſcalenous Triangle, a Square, a Circle, a Pentagon, an Hexagon, an Heptagon,* and *an Octagon.* †

BUT in the ſecond Chapter he hath given us the geometrical Conſtruction of the *Equilateral Triangle*, the *Square within a Circle*, the *Pentagon*, the *Hexagon*, an *Heptagon*, and an *Octagon*: The three laſt of which he hath ſhewn how to deſcribe, but for the firſt, as well as all the other geometrical Figures, he refers us to Euclid. Theſe Figures he calls the *fundamental Principles of Perſpective*; but I apprehend, that the fundamental Principles of Perſpective are laid in the Knowledge of the Doctrine of Lines and Angles, the various Interſection of Planes, and a tolerable Acquaintance with that Part of Optics, which is called *direct Viſion*; and not in knowing only how to deſcribe any Number of geometrical Figures: In fact, neither theſe, nor any other geometrical Figures, make up the leaſt Part of that Art, which, ſtrickly ſpeaking, is called Perſpective; they may indeed be proper Subjects to exerciſe the Hand of a Beginner, but it is abſurd to call them the Principles of that Art, and conſequently this Syſtem of *Sirigatti*, thus far, is built upon a wrong Foundation, or rather on no Foundation at all.

IN his third Chapter, he aſſigns ſome Reaſons for the apparent Magnitude of Objects; and for a farther Illuſtration, refers his Readers to *Euclid* and *Vitellione*, whoſe Books upon Perſpective, are (he ſays)

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† In all the above Figures *Sirigatti* hath not thought fit, either to explain the Reaſon of thoſe Terms, the Properties peculiar to each of them, nor the Conſtruction of moſt of the geometrica Figures: However in the next Chapter he promiſes to begin with the *fundamental Principles of Perſpective*.

ſays) very learned and extenſive. He next proceeds to give a Specimen of his Work, by publiſhing his Rule, which he again aſſures us is of his own Invention, and the Principles of it, he ſays, are built upon the immediate Nature of ſeeing Objects: For it is only the Superficies of Objects, which appear to the Eye, wherefore the Greeks called thoſe Superficies, Appearances.

He next obſerves, that as the Quantity of Superficies can be varied only two Ways, *viz.* Either by Length or Breadth, ſo the forſhortening any thing in Perſpective can be performed only two Ways, *viz.* Either in reſpect to its Length or Breadth. As a Conſequence of the above Rules, he tells us now, of his having invented † two Lines, one of which will give us the Meaſure of the Lengths, and the other of the Breadths: And becauſe theſe Lines interſect the Rays that come from the Object to the Eye, they muſt neceſſarily determine the Lengths and Breadths of each Object. That the nearer theſe two Lines are placed to the Eye, the ſmaller will be the perſpective Deſign; becauſe the Rays will contract towards the Eye, form as it were a Pyramid, whoſe ‡ Baſe, is the real Object, and its Summit the Eye. He alſo makes uſe of two other Lines, the one placed perpendicularly upon the other: By the help of theſe Lines the Lengths and Breadths are tranſpoſed from the former Lines, and by that Means the Repreſentations are to be completed. Having given us this by way of Introduction, he next proceeds to explain his Rules; which are as follows.

“ In this Figure the Line AL is called the Ground-Line, on which Fig. 1.
“ the § Object, intended to be drawn in Perſpective, is to be placed;

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† His Explanation of this, through Mr. *Ware*, is ambiguous, and will be apt to miſlead his Readers, ſince only theſe two Lines are made uſe of for putting any ſolid Body into Perſpective. A Superficies indeed has only Length and Breadth, but it is the Property of a Solid to have Length, Breadth and Thickneſs. And I preſume nothing can well be more unintelligible than the remaining Part of this Chapter.

‡ Mr. *Ware's* Tranſlation ſays, “ by Reaſon that the Rays *contract towards the Eye*, forming, “ as it were, a Pyramid, the Baſe of which is *towards* the Object, and the Summit or Point of “ it *towards* the Eye.” Surely this betrays a Want of Knowledge even in the firſt Principles of Optics; for the Baſe of the Pyramid is the Object itſelf, and its Apex or Summit is the Spectator's Eye.

§ This ſhould have been more clearly expreſſed; for what Object, or what Part of an Object does he mean? A whole Object cannot be intended, becauſe only a ſmall Part of an Object can be ſaid to ſtand upon a Line, or to be cut by a Line in Profile?

“ and underneath this let the Plan be drawn, and upon the *Profile*
“ (as may be ſeen hereafter) the Line CB muſt be drawn upon it at
“ right Angles, interſecting it in the Point P, which is to be called
“ the Section-Line, or the Line of Dimenſions, becauſe upon this
“ the Rays will interſect, and the Meaſures or Dimenſions are to be
“ taken from it; it muſt be obſerved, that the Breadths are to be taken
“ from that Part, which is underneath; and from the Part above,
“ *i. e.* from PC, the Lengths; L being the Point of Diſtance, and
“ the Eye to be placed at the Point D, from which a perpendicular
“ Line is to fall upon the ground Line, as DL, and let the Point L
“ be that to which all the Rays, which give the Breadths, muſt be
“ drawn from the Plane: To the Point D the Rays of the Profile
“ are alſo in the ſame Manner to be drawn, and from the Sections
“ upon the Line PC, the Dimenſions of the Lengths muſt be taken.

“ The Lines RS and PZ being formed into a Square * are thoſe,
“ upon which the Plan is to be drawn, in which all that is to be put
“ into Perſpective is to be deſigned, and the Lengths and Breadths
“ already found out are to be tranſpoſed; all which will be better
“ underſtood in the Sequel of this Work.”

Now ſince both theſe Explanations appear to me obſcure and ambiguous, I ſhall therefore hope to be indulged in an Attempt at making *Sirigatti's* Meaning more intelligible.

Draw upon the Line AL the Profile or Upright of the Object, which is to be put into Perſpective, and directly under it draw the Plan of the ſaid Object; then at the Diſtance, which the real Object is ſuppoſed to be from the Picture, draw CB perpendicular to AL, and conſider AL as the Ground-Line, CP as a Profile Section of the Picture, and PB as the Bottom of the Picture, and therefore call CB the Section-Line obtained or Line of Dimenſions. From this Line CB the perſpective Meaſures are to be taken, both for the Heights and Breadths, becauſe this Line is ſuppoſed to cut the Rays of Light as they come from the real Object to the Eye of the

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* I cannot conceive how the Lines RS and PZ are formed into a Square, the Line PZ is indeed perpendicular to RS, and the Angles on each Side at P are right ones; but a Square, according to his own Definition, is a Figure of four equal Sides and Angles.

Spectator: That Part of the Line, which is above P, *viz.* PC is for the perſpective Lengths, and the Part below P, *viz.* PB is for the perſpective Breadths: The Point at D is ſuppoſed to be the Place of the Spectator's Eye, L his Feet, and DL repreſents his Height, ſo that conſequently the Length of the Line PL is the Diſtance of the Spectator from the Picture. And here we muſt carefully obſerve, that the Lines, which are to determine the Lengths, are to be drawn to the Point D, and the Lines, that are to determine the Breadths, are to be drawn to the Point L. All which may be clearly comprehended by the following Figures.

THE Line PZ, being drawn perpendicular to RS, will be all the Preparation which is farther neceſſary for putting any of our intended Deſigns into Perſpective; which will be better underſtood hereafter §

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§ We will now produce this very Rule from *Vignola*, and then leave the Reader to judge whether *Sirigatti* was a piratical Author or not. *N. B.* The ſame Figure (*viz.* Fig. 1) with little variation, will ſerve for our preſent Purpoſe.

Vignola, who was an eminent Italian Architect, compoſed a Treatiſe upon Perſpective, which was every Way equal to the great Genius of its Author. This Work was publiſhed by *Ignatius Danti*, a very learned Mathematician, with many curious Annotations of his own upon it. It is entitled *Le due Regole della Proſpettiva Prattica di. M.* Jacomo Barozzi *da* Vignola *con i Commentarij del R. P. M.* Egnatio Danti *dell' ordine de Predicatori Matematico dello Studio di* Bologna. *In* Roma *per* Franceſco Zannetti, 1583. i. e. *The two Rules of practical Perſpective, by Mr.* James Barozzi *of* Vignola ‡ *with the Commentaries of the Reverend Father* Ignatius Danti, *of the Order of Preachers, Mathematician of the School of* Bologna. *Printed at* Rome *by* Francis Zannetti, 1583.

Both theſe Authors have treated this Subject as judicious Mathematicians, and ſeem to be alſo well acquainted with the Arts of Deſign. The Theory, as well as Practice, is conſidered at large, and (allowing for the Time in which they wrote) we may look upon this Work as a very ingenious and uſeful Performance. We may moreover with Confidence aſſert, that the Rule, which *Sirigatti* ſo often ſays is his own Invention, will be found to differ in nothing from that which was publiſhed ſo many Years before as *Vignola's*; and therefore was in all probability taken from him †

" CHE COSA SIANO LI CINQUE TERMINI. *Vignola* Cap. iv.

" Egli e da conſiderare, che volendo diſegnare le Proſpettive, biſogna havere il luogo, o
" vogliamo dir muraglia, o tauola di legno, o tela, o carta. Per tanto qual ſi voglia di queſte
" ſara nominata in queſto trattato per la parete. Li cinque termini adunque ſono queſti.
" Primo,

‡ *Though* Barozzi *was the Name of his Family, yet according to the Italian Idiom he is generally called* Vignola, *from his being born in the Town of that Name.*

† Vignola *was Born in* 1507, *Died in* 1573, *and his Book was publiſhed by* Danti *in* 1583—— Sirigatti's *Book was publiſhed in* 1596. *See the Preface.*

IN the fourth Chapter *Sirigatti* determines a proper Place for the Point of Diſtance, which he ſays may be looked upon as a bold Attempt

" Primo, quanto vogliamo ſtar diſcoſto dalla parete.
" Secondo, quanto vogliamo ſtar ſotto, o ſopra alla coſa viſta.
" Terzo, quanto vogliamo ſtare in proſpetto, o da banda.
" Quarto, quanto vogliamo far' apparire la coſa dentro alla parete.
" Quinto and ultimo, quanto vogliamo che ſia grande la coſa viſta.

Vignola's Book is entitled, (as was obſerved above) *The Two Rules of Practical Perſpective.* The firſt of theſe Rules was the ſame with that afterwards publiſhed by the anonymous Jeſuit; and the latter, That, which was publiſhed by *Sirigatti*: Before he begins to apply his ſecond Method to Practice, he ſays it is neceſſary to explain the five Terms (or as *Danti* expreſſes it, the five Things to be reſolved on, before we begin to put any Object into Perſpective) The Meaning of theſe five Terms is as follows, *viz.*

1 How far we are to be from the Picture.
2 How much above or below the Object.
3 Whether we would be placed before the Object or on one Side of it.
4 How far we would have the Object appear behind the Picture.
5 What Magnitude we would give the Object.

VIGNOLA, Cap. v.

" A mettere in regola li cinque termini, tiriſi una linea piana infinita PL, poi ſe ne tiri un'
" altra BC, ad angola retti, che ſeghi la prima nel punto P. Et quella parte che ſara ſopra la'
" linea piana PC, ſervira per la parete nominata nel terzo capitolo, & quella che ſara ſotto la
" linea piana, che e PB, ſervira per il principio del piano, & quel tanto che ſi vorra ſtar diſ-
" coſto dalla parete, ſara da PL, che ſara il primo termine delli cinque. Et ſe ſi vorra ſtare ſo-
" pra la coſa viſta, ſara quanto e da PC, ſu la pareta; & tiriſi una linea CD, parallela col
" piano alla viſta dell' huomo, & ſervira per l'orizonte, che per l'ordinario ſi mette l' altezza
" d'un giuſto huomo; il quale ſi preſuppone che ſia ſul punto L, & le linee che ſ'haveran no a
" tirare per li ſcorci, o vogliamo dire altezze, andranno all'occhio del l'huomo, et ſara il ſe-
" condo termine. Il terzo ſara, quanto ſi vuole ſtar da banda, o in mezzo a veder la coſa:
" che volendo ſtar da banda, ſara quanto e da PB, ſu la linea del piano, & il punto per tirar
" le larghezze nel punto L, alli piedi della Figura. Et quanto ſi vorra far apparire la coſa
" oltre la parete, ſara da P, a D, et ſara il quarto Termine. Et quanto ſara grande la coſa
" viſta, ſara il quadro ſegnato G, che ſara il quinto & ultimo termine.

N. B. The 108 Figures, Book 2. of my Perſpective, is an exact Copy of the Figure in *Vignola*, which he here refers to.

VIGNOLA, Chap. v.

Fig. 1.

In order to adjuſt theſe five Terms, let there be drawn an infinite horizontal Line AL, then draw another BC at right Angles to it, cutting the firſt in the Point P. Then that Part PC, which is above AL, will ſerve for the Plane of the Picture (or what we have before called the Wall) and that Part PB, which is under the Line AL, will ſerve for the Beginning of the horizontal or ground-Plane: The Space we would be diſtant from the (Plane of the Picture, or) Wall, will be PL; which is the firſt of the five Terms. And if we would ſtand above the Object, it ſhall be the Length of LD, which is marked on the (Plane of the Picture, or) Wall; and if a Line DI is drawn from the Repreſentation of the Spectator's Eye D parallel to the horizontal Plane AL, then DI will ſerve for the Horizon, which is generally put equal to the Height of a well proportioned Man, and which we have preſuppoſed to be at the Point D. Now the Lines, which we ſhall have to draw for the Foreſhortenings or Heights will go to the Eye of the Man; and this will be the ſecond Term. The third Term will be, how much we ſtand on one Side, or in the Middle, to ſee the Object; which will be on the Line PL. The Point for drawing the Breadths to the Feet of the Figure is I, and the Diſtance we would make the Object beyond the Picture ſhall be from P to E; which will be the fourth Term. And the Bigneſs of the Object is repreſented by the Square G, which is the fifth and laſt Term.

tempt, ſince the ſame Object can be ſeen from an infinite Number of Places: However, he ſays this his Rule is built upon his *own* Experience, the beſt Teacher of all Things. He obſerves that it may ſometimes happen when this Rule cannot be exactly followed, but then we ſhould always take Care to keep as near to it as poſſible.

How to place the Point of Diſtance.

“ WHEN the Point of Sight is fixed upon, it muſt be ſituated in ſuch a Manner that a Perpendicular muſt fall from it upon the Plane, upon which the Object is placed, to be foreſhortened; and from the Extremity of the ſame Perpendicular a Line muſt be drawn to the neareſt Point of the Object; this Line muſt be one and one half longer than the longeſt tranſverſal Line of the Object repreſented to the Eye: Moreover, the Height of the Point of Sight muſt be above the Plane a third Part of the Diſtance already found: For Example, ſuppoſe any of the annexed Figures are to be foreſhortened, take the greateſt tranſverſal Line of any of the ſaid Figures, ‡ ſuppoſe Fig. 2. the Line AB, then draw the ground-Line PL on the Plane, and this Line PL is to be the Seſquialteral of AB, that is, one and one half longer than AB; and upon the Point L draw the Perpendicular LD in Height one third Part of the Length of the Line PL, and

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In the ſixth Chapter of *Vignola's* Book, he hath ſhewn how to apply the abovementioned five Rules to Practice; or as he calls them the five Terms for the Degradation of plane Superficies.

Fig. 3. N°. 1. He firſt adjuſts the Diſtance of the Picture, and the Height of the Spectators Eye; or which is the ſame Thing, the Height of the horizontal Line: Then he draws Lines from the Points 3, 4 in the Plan A to the Eye D; which give the Heights, on the Section PC; and other Lines from the Points 1, 2 to the Point L, which give the Breadths on PB: He doth not indeed transfer theſe Meaſures to any other Figure, but by ſetting the greateſt Breadth P 1 to P a and drawing a C, and then by drawing 3 c and 4 6 parallel to P a he gets one half of the Repreſentation; and by repeating the Operation on the other Side of PC he compleats the whole Figure. *Vide Vignola,* Chap. vi.

Thus much, I preſume, is enough to ſhew that *Sirigatti* pirated his favourite Rule from *Vignola*; and whoever ſhall have an Inclination to ſee more Examples of this kind by *Vignola*, may have their Curioſity abundantly ſatisfied by conſulting his Book.

‡ I have given only one of theſe Figures, *viz.* a Square, which being ſufficient for an Explanation, I have therefore omitted his two other Figures, *viz.* an Octagon and a Circle.

“ and the Point D will be the Point of Sight or Place of the Eye; by
“ Means of which, the Figures to be foreſhortened will be drawn
“ with more Beauty and Perfection, than if the Point of Sight were
“ placed any where elſe.” *

THE fixing a proper Diſtance for the Eye is certainly one of the moſt eſſential Requiſites in Perſpective; but in the above Explanation, the ſame kind of ambiguous Expreſſions run through the whole, as in the preceding Paragraphs. For firſt L is called the Point of Sight, and afterwards D is called by that Name; and what Novice in Perſpective can conceive how a Line ſhould be drawn from D to P perpendicular to the Side AB of the Object? And ſo again in regard to the Eye's being placed *one third above the Plane*, *&c.*——But if I may take the Liberty, I will endeavour again to make it a little more intelligible, in the following Manner.

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* Notwithſtanding the mighty Streſs, which *Sirigatti* lays upon this Method for determining the Diſtance of the Eye, a little Conſideration will make it appear very erroneous: In the firſt Place, no Regard is had to the whole Extent of the Picture, but only to a ſingle Object, which is propoſed to be repreſented upon it. Suppoſe therefore only one Object was to be drawn upon a Picture (for Inſtance a Houſe) which was deſigned to fill up but one fourth Part of the Width of it; then if we would ſee this Object from the true Point of Sight, we muſt be placed one fourth nearer to the Picture than we ought to be, if we would take in the whole Compaſs of the Picture at one View: An Abſurdity too great to be admitted by any one who has the leaſt Notion of Drawing or Deſigning; becauſe here are evidently two Points of Sight to the ſame Deſign; one for Inſtance but two Foot from the Picture, and the other eight Foot from it. Again, ſuppoſe there ſhould be more Objects than one to be reduced into Perſpective, by what Rule then is the proper Diſtance to be adjuſted? This, neither *Sirigatti* nor his Tranſlator, ſeem to have thought of, or at leaſt have not given us one Example to ſhew how we are to proceed, when this happens to be the Caſe. *And to this is owing, I apprehend*, thoſe moſt palpable Errors in the Perſpective of the Print repreſenting the *Horſe-Guards*, *&c*, which is particularly remarked in my laſt Plate. For there being two ſeparate Objects, they by this Method required two ſeparate Operations, two different Diſtances, (as the Meaſures were different) and conſequently two different Points of Sight: But of this more hereafter. In the next Place, by this Rule the Height of the Eye is to be always made equal to half the Length of the Object; ſuppoſe therefore it were required to put *a Range of Buildings into Perſpective* two hundred Feet long, and fifty Feet high; in this Caſe the Point of Sight would be placed one hundred Feet above the Ground Plane, inſtead of it's being made but a little more than the Height of a common Man, *viz.* about five Foot ſix Inches. And what *Sirigatti* doth not ſeem to be aware of, a View thus drawn, would not be a natural one, but what is called a Bird's-Eye View —— It may be neceſſary to obſerve in this Place, that I have not kept to this Rule in any of the following Figures; I found it more convenient to avoid it; and it is, I apprehend, ſufficient, if *Sirigatti's* Meaning is underſtood.

To determine the Diſtance of the Eye, or the Point of Diſtance, Fig. 2. the following Method, I am confirmed by Experience, is the beſt—Let L be conſidered as the Feet of the Spectator: Draw a Line from thence to the Object AB, and in ſuch a Manner that it ſhall be perpendicular to AB as LP; now LP is the Diſtance of the Spectator from the real Object AB, becauſe the Perpendicular LP is ſhorter than any other Line which can be drawn from L to the Line AB: I ſay that the Length of the Line LP, ſhould be one and one half longer than the greateſt Width AB, or EF, of the Object: And if from L, a Line LD be erected perpendicular to the Line LP, and one Half of AB (or which is the ſame Thing one Third of LP) is ſet from L to D, then the Line LD is to repreſent the Height of the Spectator, andD his Eye or Point of Sight. By always following this Rule, the Figures which are produced in Perſpective will be drawn with more Beauty and appear to greater Perfection, than if the Point of Diſtance were placed any where elſe.—Thus much for *Sirigatti's* Method of determining the Diſtance of the Picture.

His fifth Chapter begins with ſhewing how to apply this his Rule to Practice; which I ſhall explain with as much Clearneſs and Brevity as I poſſibly can; and ſhall follow the ſame Method throughout the remaining Part of this Work, not ſo much regarding Mr. *Ware's* peculiar Manner of Expreſſion, as the making *Sirigatti's* Meaning clear and eaſy to be underſtood.

SIRIGATTI.

To put a Square into Perſpective.

In the firſt Place draw the Ground-Line PL and underneath it Fig. 3. N°. 1. draw half the Square A as in the Figure, which will be ſufficient when the Middle of the Object is ſuppoſed to lie directly againſt the Eye; or, which is the ſame Thing, when the Point of Sight is over the Middle of the Object: The next Thing is to mark the ſeveral Angles of the Plan with particular Characters, as 1, 2, 3, 4; and ſince 14 is but half the Width of the Object, therefore from 4 ſet off 3 times the Length of 14 towards L; then draw LD perpendicular to PL, and make LD equal to 14. Now it is evident that if the Eye were placed at D it would ſee the Line 34 under the Angle 3D4; and if it was removed to L it would ſee the Line 14 under the Angle

1L4, and the Line 23 under the Angle 2L3. And ſince the Line 14 is nearer to the ſuppoſed Place of the Eye than 23, therefore it is ſaid to be ſeen under a greater Angle than 23, and therefore will appear longer to the Eye than the Line 23; but the Line 34 which is directly againſt the Eye will appear to be no more than a Point. Again, through any Point P draw CB perpendicular to PL, which will be the Section-Line; for if we conſider the Lines 3D, 4D as Rays of Light which go from the Object to the Eye, it is evident that PC cuts thoſe Rays, and therefore the Space comprehended between 34 (upon the Line PC) is the perſpective Length of 34 in the Picture; and the Diſtance from P to 4 (on PC) is the perſpective Length of P 4: In like manner if the Point L be conſidered as the Eye, then P1 will be the perſpective Breadth of 14, and P2 the perſpective Breadth of 23.

" All thoſe Things being rightly underſtood, we will now exhibit " one Thing which ought not to be concealed, as it will be of great " Conſequence to the Learner. It is this. Suppoſe it were required " to diminiſh the Perſpective of an Object to any certain Degree or " Proportion; I ſay this is to be obtained by placing the Section-Line " CP either nearer to the Point L or farther from it, as occaſion re- " quires. For Inſtance, ſuppoſe the Perſpective of the Line 14 is to " be only three Fourths of 14, divide the Diſtance 4L into four Parts, " then through F, (three Parts from L) draw the Section-Line GH " and then will 5F be exactly three Fourths of the Line 14: In like " Manner any other perſpective Proportion may be obtained."

Having thus explained every thing neceſſary in order to facilitate the Practice, let us now ſee how the Perſpective of the Square A is to be compleated—Upon the ‡ Bottom of the Picture SR let fall a Perpendicular from the Point of Sight, as ZP; this being done, the next Thing is to transfer the Lengths and Breadths from BC to this Figure; which is done thus. Take with your Compaſſes the Lengths P4, P3 and ſet them from P (Fig. E) on the Line PZ and through 2, 4 draw Lines parallel to SR; then from PB take P1 and ſet from 2 one each Side PZ, as 21, 21, and take P2 and ſet in the ſame

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‡ *Sirigatti* takes the Lines SR at Pleaſure, which I think will miſlead his Learners, becauſe SR muſt always be conſidered as the Bottom of a Picture, Drawing, or the like; for otherwiſe every Object will ſtand out of its Place, and the whole Perſpective will appear prepoſterouſly abſurd.

Manner from 4; and then draw the Lines 13, 13; which will complete the Perſpective of the Square required.

BEFORE a Concluſion is put to this Article, another Method for facilitating the Practice is propoſed, by which means a great Confuſion of Lines (ſays *Sirigatti*) is to be avoided. But the neceſſary Confuſion that muſt attend the great Number of Points, which will unavoidably be found in the Projection of any but the moſt ſimple Objects, will appear to be intolerable. Experience will juſtifie this Aſſertion; but for the Rule——Fix in the Points D and L two ſmall Nails, to which let two Threads be faſtened, and theſe Threads will anſwer the ſame Ends as the dotted Lines in the Figure. For extend the Thread at D to the Point 4 on the Ground-Line, and it will give the Length P4, which muſt be tranſpoſed to P2 (Fig. E) the Compaſſes being kept opened to the Length of P2, extend the other Thread at L to the Point 1 and it will give the Breadth P1, which muſt be taken with another Pair of Compaſſes, and tranſpoſed to P6, P7; then place one Leg of the Compaſſes with the Length P4 in the Point 6, and in the Point 2 place one Leg of the other Compaſſes which contains the Breadth, and by croſſing the moveable Point of both Compaſſes to the right and left, we ſhall have the Points 1, 1; and by repeating the Operation we ſhall get the upper Points 3, 3; and then by drawing 13, 13, the Figure will be completed.

I HAVE dwelt the longer on this Chapter, as it contains the whole of *Sirigatti's* Perſpective: It is now neceſſary, before I proceed any farther, to ſay ſomething about that Method of Dr. *Taylor's*, which we are going to exhibit in Oppoſition to that of this famous and learned *Italian* Author.

§ THE Principles, upon which Dr. *Taylor* has eſtabliſhed his Syſtem of Perſpective, are purely mathematical, and therefore capable of the ſtricteſt and moſt exact kind of Demonſtration: His Rules are at the ſame Time, few, ſimple, and of univerſal Extent; as will in ſome Meaſure appear from the following Examples, which exhibit on one Side of the Page the Schemes of *Sirigatti* performed after his own

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§ Dr. *Taylors* Book was firſt publiſhed in 1719.

Method, and on the oppoſite Side (that the Compariſon of the two Syſtems might be made with the greater facility and exactneſs) are ſeverally oppoſed the ſame Subjects, treated in a Method conformable to the Doctrine of Dr. *Taylor*. All theſe laſt-mentioned Schemes I had originally given of the ſame Size with thoſe which I have extracted from *Sirigatti*, and in their Delineation I had aſſumed the ſame Diſtance and Height of the Eye that is preſcribed by *Sirigatti*; but by the Advice of a very judicious Friend it was thought neceſſary to vary theſe Circumſtances, leſt it ſhould be ſaid by the Ignorant and Malevolent that I took the Meaſures from *Sirigatti*, and then by drawing Lines at Random, have pretended to determine Points which no Rules can obtain: For in this Manner, how abſurd ſoever it may appear, have they already treated the Followers of *Brook Taylor*; but this Precaution will, I imagine, obviate all ſuch ridiculous Accuſations.

TAYLOR.

To put a Square into Perſpective.

Fig. 3. N°. 2. Let DC be the horizontal-Line, C the Center of the Picture, CD the Diſtance of the Eye, AB the real Width of the Square ſet upon the Bottom of the Picture, and B1 the Diſtance which the Object is ſuppoſed to be from the Picture.

From A and B draw Lines to C; from 1 draw a Line to D; from b, c (where D1 cuts AC, BC) draw two parallel Lines ab, cd, which completes the Figure,

N. B. In this Figure, the Meaſures are taken from *Sirigatti*. And it is to be remembered, that C will always ſtand for the Center of the Picture (or Point of Sight) and CD for the Diſtance of the Eye; becauſe a Repetition of theſe Terms will, for the future, be avoided.

SIRIGATTI.

How to exhibit the Perſpective of a Square with one of its Angles towards the Eye.

Fig. 4. N°. 1. Draw the Ground-Line PL, and let one half of the Square A be drawn under it; and from the Angle 1 draw 1 3 perpendicular to

the Ground-Line, which will cut 2 4 into two equal Parts; and becauſe A is half a Square, therefore 1 3 will be equal to 2 3 or 34: Now the Line 4L muſt be equal to three times 1 3, and the Line LD muſt be drawn perpendicular to 4L, and made equal to 1 3; then is D the Point for the Lengths, and L is the Point for the Breadths. Upon theſe Points two Threads are to be fixed, as in the former Example; which Threads are repreſented by the dotted Lines: Then draw the Lines SR and PZ, the one perpendicular to the other; laſtly draw the Section-Line BC. This being done, extend the Thread from the Point D to the Point 4, and with the Compaſſes take the Length P4, and tranſpoſe it from P to 4 (Fig .E) then extend the Thread from L to 1, and with the other Compaſſes take the Breadth P1, which muſt be tranſpoſed from P to 5, 5; then place one Foot of the Compaſſes with the Length P3 in 3, and that for the Breadths P5 in 5; and then croſſing the Points of the Compaſſes from right to leſt, mark the Points 1 1; laſtly extend the Thread from D to 2, which will give the Length P2, this muſt be tranſpoſed from P to 2, and then Lines being drawn from theſe four Points 1, 2, 1, 4, ſo as to join each other, we ſhall have the Square foreſhortened as required.

TAYLOR.

To put a Square into Perſpective when it is oblique with the Picture.

LET AB be the Diſtance which the Square is from the Picture, and B1 the Length of the Diagonal of the Square—From A draw AC, from B draw BD, and from 1 draw 1D; then from C ſet off the Diſtance CD to L, from L draw a Line through c to a, and from b draw bL, which finiſhes the Figure. *

SIRIGATTI.

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* By this Method every Line of the Repreſentation is drawn to its proper vaniſhing-Point; but by *Sirigatti's*, the Sides of each Object are determined by Lines that are no Part of the Object, which will make every perſpective Repreſentation very incorrect. For the Truth of this let any One make the Experiment, by drawing thoſe Sides of Objects which repreſent parallel-Lines in Mr. *Ware's* Plates till they meet each other, and he will find that they will be almoſt as many different Points as there are Sides to his Figures.

SIRIGATTI.

How to put an Hexagon into Perſpective.

“ THERE being no material Difference between the former and “ the following Operations, I ſhall proceed with all poſſible Brevity.”

Fig. 5. N°. 1. ALL Things being prepared as before, *viz.* the Ground-Line PL, half of the Object A, the Diſtance 5L, the Place of the Eye D for the Lengths, and L the Point for the Breadths; the Section-Line BC, and the two Lines SR, PZ—With the Threads find the Length P5, and the neareſt Breadth P6; tranſpoſe them by means of the Compaſſes, *&c.* to Fig. E; do the ſame by all the other Lengths and Breadths, and then by drawing Lines to the correſponding Points the Figure will be completed.

TAYLOR.

To put an Hexagon into Perſpective.

Fig. 5. N°. 2. HERE H and L are the vaniſhing Points of four Sides of the Figure, c is given for its Center, and a b for its Diameter. From H draw Lines through a and b at pleaſure; do the ſame from L; from H draw a Line through the Center c; finally from e and g draw e d, and f g parallel to a b, which finiſhes the propoſed Repreſentation.

THE next Figure in *Sirigatti's* Book is a Pentagon, which is produced in the ſame Manner as the Hexagon.

SIRIGATTI.

How to exhibit a Circle in Perſpective.

Fig. 6. N°. 1. BY the Figures already produced, we have ſufficient Directions for the forſhortening all right-lined Figures; but ſince a circular Figure has no right Lines, is is neceſſary to deſcribe a Polygon within it; or which will anſwer the ſame Purpoſe, to divide the Circumference of the Circle into any number of equal Parts, as in the Figure. Every thing being prepared as in the former Examples, and the Semicircle being drawn, with Lines perpendicular to the Ground-Line from the

Points in the Circumference, as a2, b3, &c; then from the Point D extend the Thread to the Points 1, 2, 3, 4, 5, 6, 7, 8, 9, which will ſeverally give the Lengths on the Section-Line; do the ſame by the Thread at L, to the Points a, b, c, d, e, f, g, which will ſeverally give the Breadths; and theſe being taken with the Compaſſes, and tranſpoſed in Figure X, will ſucceſſively give the ſame Number of Points in an oval Figure; which Oval, if neatly join'd by Hand, will be the Perſpective of the Circle required.

“I CANNOT avoid obſerving in this Place, that ſince the Degredation of a Circle is nothing but an oval Figure, which the *Greeks* called an Elipſis, that this Degradation may be performed by a much eaſier Method; that is, by taking the greateſt Breadth mark Pd, upon the Section-Line, and the greateſt Length 91, as the leſſer Diameter, form the Elipſis *

TAYLOR.

To put a Circle into Perſpective.

THE Center of the Circle is c, and a b is the Diameter given. Fig. 6. N°. 2. Through the Center c draw Lines from H and L; do the ſame from C; lay a Ruler to P and a, and make a Dot at 1; lay the Ruler to H and a, and make a Dot at 2; lay the Ruler to Q and b, and make a Dot at 3; do the ſame by P and b, and make a Dot at 4; repeat this from H and b, and make a Dot at 5; finally lay the Ruler to Q and a, and make the Dot at 6; then will a, 1, 2, 3, b, 4, 5, 6, be eight Points, through which the Repreſentation may be completed.

SIRIGATTI.

To put a Plan into Perſpective divided into many Squares.

DIVIDE the half of the Plan lengthways as 17, into as many equal Fig. 7. N°. 1. Parts as you pleaſe, ſuppoſe ſix; and divide each End 1c, 7d into half that Number, *viz.* 3, which will be ſufficient for the Purpoſe; then extend the Threads from D and L, which will give the Lengths and Breadths upon the Section-Line: This being done, next find the Perſpective of the whole Square X, and take the Widths from Pd, and the Lengths from P1, and then draw the ſeveral Lines to complete the Figure as before directed: Or by dividing dd, and cc, each into ſix equal Parts, the Breadths may be determined. *

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* That a regular Elipſis is the perſpective Repreſentation of a Circle, is an Abſurdity, I believe, not to be met with in any other Book upon this Subject: For every one muſt know (who knows any thing of Perſpective) that the fore Part of a Figure, which repreſents a Circle, is more round than the back Part of it, becauſe the Former is nearer to the Eye than the Latter; and therefore the Figure cannot be deſcribed by any two Diameters whatever.

TAYLOR.

To put a large Square into Perſpective, and then to divide it into any Number of ſmaller Squares.

Fig. 7. N°. 2. LET 1 2 be the Breadth given for the large Square—From 1 and 2 draw Lines to C; from 1 draw 1D, and from 3 draw 34 parallel to 1 2, which finiſhes the large Square: Divide 1 2 into ſix equal Parts, and from each Diviſion draw Lines to C; where thoſe Lines are cut by 1D, draw Lines parallel to 1 2, as in the Figure, and ſo will the whole Perſpective be produced.

THE next Chapter in *Sirigatti* is to ſhew how to exhibit the Perſpective of a Plan, divided Liſt-Faſhion; which is performed exactly in the ſame Manner as the laſt Figure, only the Diviſions are not equal.

ALL the Figures, which have been hitherto produced, are Examples to ſhew how Plans of any Shape may be put into Perſpective when they lie directly before the Eye. *Sirigatti* next proceeds to ſhew how the Perſpective of Plans are to be determined when they are ſeen by the Eye in an oblique Poſition, or to ſpeak more intelligibly, when they are ſeen Side-ways by the Eye. Thoſe Operations, he ſays, differ from the former in three Things; firſt, here the whole Plan muſt be drawn; ſecondly, the Square being at a greater Diſtance from the Ground-Line, it will be more ‡ foreſhortened; and thirdly, the Meaſures were before tranſpoſed to the right and left, but muſt now be tranſpoſed on one Side only.

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* Mr. *Ware* ſays, "that the Breadths (in this Figure) will not vary from thoſe in it's "perfect State;" I ſuppoſe by perfect State he means the original Object; but every ſucceſſive Line grows ſhorter and ſhorter in Proportion to its Diſtance from the Eye, which ſurely is varying the Proportions. Had he been at all verſed in this Science, he would have ſaid, that when Lines are parallel to the Picture, the Repreſentations of them would be ſimilar to the Originals, though leſs and leſs in Proportion to their ſeveral Diſtances. Beſides, near one half of the Lines given by *Sirigatti*, are omitted *in this Figure by Mr. Ware*, which makes his Explanation very incorrect, imperfect, and unintelligible.

SIRIGATTI.

To find the Perſpective of a Square obliquely ſeen.

Fig. 8. N°. 1. HAVING firſt drawn the Ground-Line, the Section-Line, and given the Points for the Lengths and Breadths; * then draw the propoſed Square A under the Ground-Line; from all the Angles of which, Perpendiculars are to be drawn to the Ground-Line, as in the Figure: This being done, draw SP and PZ perpendicular to it; then extend the Thread from D to 1, 2, and from L to the four Corners of the Square, which will give the Lengths and Breadths upon the Section-Line; as in the preceding Examples. Having proceeded thus far, the next thing is to tranſpoſe the Lengths and Breadths to Fig. X, then by joining the Lines the Figure will be finiſhed. Thus the Length P2 (on the Section-Line PC) is tranſpoſed from P to 2, and the Breadth P6 is tranſpoſed from 2 to b, the Breadth b d to b d, &c.

TAYLOR.

To put a Square into Perſpective, when it is ſeen ſideways, and when two of its Sides are parallel to the Picture.

Fig. 8. N°. 2. HERE ab is one Side given—From a and b draw Lines to C; from b draw bD; then draw c d parallel to a b.

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‡ Foreſhortening ſeems in this Place to be extremely miſapplied, becauſe the farther any oblique Line, of this kind, is from the Eye, the longer it will be in the Perſpective, and not the ſhorter: Thus ab, being nearer to Pz than cd, is proportionably ſhorter than cd.

* As the original Square A, in this Figure, does not lye directly before the Eye, it was neceſſary to have given another Rule for determining the Diſtance to be made uſe of; but this *Sirigatti* hath not thought fit to explain, either in the Reading, or by the Figure: A Thing ſo very eſſential, that it ought on no account to have been omitted; and eſpecially as he hath not only here, but in many other Places, deviated from the Rule which he had given before for this Purpoſe.

N. B. If the Repreſentation is to be of any determinate Bigneſs, or at any Diſtance, either from the Bottom of the Picture, or to the right or left of the Eye, it is always to be done in the ſame eaſy Manner: Thus Lines drawn from C to the Bottom of the Picture, will give the real Bigneſs of the Square, *&c.*

SIRIGATTI.

How to exhibit the Perſpective of the ſame Square, with one Angle towards the Eye.

Fig. 9. N°. 1. THE Operation in this Figure is the ſame as the former, only the Situation of the Square is different—Lines drawn from each Angle of the Square A, perpendicular to the Ground-Line, will give the Points from which the other Points on the Section-Line are to be found. The remaining Part is to be done as in the laſt Figure.

TAYLOR.

To put a Square into Perſpective when it is oblique with the Picture.

Fig. 9. N°. 2. LET a b be one Side given—From a and b draw Lines to H; from a, draw a Line to C; and from L draw a Line through c to d; which produces what was propoſed.

N. B. If the Square is to be of any determinate Bigneſs, ſuppoſe equal to a e; then a Line drawn from e to P will give the Point b, that is, the perſpective Length a b, will repreſent a Line equal to a e.

THE next Figure of *Sirigatti's* treats of an Octagon, and the next of a Circle, which concludes all that he has advanced on Plans; and as theſe two Figures are put into Perſpective by the very ſame Method as the former, they may be omitted here.

WE are now arrived at the ſixteenth Chapter, which begins with the Perſpective of ſolid Bodies: And in this we are told that the following Operations will not differ in any Reſpect from the former; and that if the foregoing Rules are rightly conceived and retained, the Learner will not meet with any Caſe henceforward either new or difficult; or which will give him either Trouble or Confuſion.

SIRIGATTI obſerves, that ſolid Bodies are only different Superficies upon different Planes, [†] which differs only in their Situation, as to their being placed higher or lower; and that therefore, their Degradations are to be very eaſily determined.

THERE is alſo another Thing which *Sirigatti* mentions as an Accident (though known to every one who hath wrote upon Optics) which is this, *viz.* a Line, which is ſeen upon the Ground-Plane at different Diſtances, will appear to be of different Lengths; but if the ſame Line is placed upon an upright Plane it will not be diminiſhed in the ſame Proportion.——Proceed we now to ſolid Bodies.

SIRIGATTI.

To put a ſquare Well into Perſpective, when the Point of Sight is over the Middle of it.

DRAW one half of the Plan, as G, under the Ground-Line, and then draw the Thickneſs of the Kerb, as in the Figure. From the Plan draw the Profile A, and make it of what Height you think proper.

Fig. 10. No. 1.

IF the Degradation of the Plan is to be found by the common Rules, then only the Line 2 3 will be ſeen; for which Reaſon the Point D muſt be placed much higher than before, that the opening of the Well may be ſeen; but the Point L muſt be placed as uſual. [‡]

THIS being done, extend the Thread from L to 2, which will give the Breadth P2 upon the Section-Line PB; then extend the Thread from D to 3, and take the correſponding Lengths P3 on the Section-

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[†] But the ſame Superficies in different Poſitions may produce ſuch a Variety of Aſpects, and in ſome Caſes render the Operations ſo extremely intricate, I mean by this obſolete Method which Mr. *Ware* is ſo fond of, that all the Rules deduced from it will be found inſufficient for the Purpoſe: This however remained a Secret, till the Diſcoveries of Dr. *Taylor*; a Secret ſo myſterious to the Followers of *Sirigatti*, that they have not yet been able to penetrate into it, but ſtill think themſelves and their Method equal to any Difficulty.

[‡] What *Sirigatti* means, is this. If the Height of the Eye D, is not placed higher than the Well, only the Front 2222 can be ſeen; therefore it is neceſſary to place the Eye above the Top of the Well, that it may be ſeen!

Line PC; tranſfer the Length and Breadth to Fig. X, as in the former Examples; and then will 22 be the Width of the Bottom of the Well, and P3 its Diſtance from the Section-Line. Again, from the Points 2 2 erect the Perpendicular 22, 22, and make each equal to the Length 23 on the Section-Line PC; then draw the upper Line 22 which finiſhes the front Side of the Well. The next Thing is to find the Degradation of the Top of the Well, which we may conſider as the Plan G, carried up as high as the upper Line 22; and to do this, extend the Thread at D to the ſeveral Points 1, 7, 8, 2, on the Top of the Profile A, which will give their correſponding Heights on the Section-Line PC in the Points 1, 7, 8, 2. Finally, tranſpoſe the Heights and Widths as in the Figure, and join the Lines as before directed; ſo will the Repreſentation be completed.

N. B. The correſponding Characters, which are put to every Point in both Figures, will ſerve as a more full Explanation.

From this Figure we are to obſerve, that the Section-Line PC, which in the former Examples gave the Degradation of the Plans, will alſo give the Heights in the foreſhortening of ſolid Bodies; and therefore henceforward we ſhall call D the Point for the Heights: But the Line PB is always to ſerve for the Breadths of the Plans, whether they are ſuppoſed to lie upon the Ground-Plane, or above it; and it is neceſſary to obſerve, that the Lengths for the Plans are not to be taken from the Ground-Line, as in the former Examples, but from the Section-Line PC: Thus, Lines drawn from D to the Top of the Profile A, gave the Lengths for the Top of the Well, *&c.*

This Example is ſufficient for explaining the Perſpective of ſingle Objects, which are ſituated in this Manner; and it muſt be confeſſed, that the Rule is very ſimple, may be readily conceived, and eaſily remembered. But it is not the Simplicity of this Rule, nor the Eaſe with which it may be comprehended, that make any Part of our Objections againſt *Sirigatti's* Syſtem; no, it is the Application of his Rules to Practice, and the Errors and falſe Perſpective, which muſt unavoidably be conſequent upon them: For whoever underſtands but a little of true Perſpective, and ſhall examine the Figures in Mr. *Ware's* Book, and ſhall moreover produce the oblique Lines till they meet each other, they will find almoſt every Example to juſtify this Aſſertion. I muſt beg leave to obſerve likewiſe, that *Sirigatti* hath caſt a Shadow upon the Ground from this Figure, which he has made round at the Extremities: Mr. *Ware* has ſo far corrected this Miſtake as to terminate his Shadow with a right Line; but ſince this is in every other Reſpect as falſe Perſpective as *Sirigatti's*, it had been much better omitted. *

WE are next to begin with the Perſpective of ſolid Bodies, and to ſhew how the ſame kind of Figures are to be produced upon the Principles of Dr. *Taylor*: We ſhall alſo give the Projection of the Shadow to each Figure, which it is preſumed will be acceptable to our Readers. And as there is not one Line or Point omitted which were required in each Operation, any one may judge from hence which of the two Methods is to be preferred.

TAYLOR.

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* Since Mr. *Ware* hath taken the Liberty of changing the Form of thoſe Shadows which he found in his Author, and has even added ſome of his own Invention; who would expect to find every Example of this kind notoriouſly falſe and abſurd? But that this is actually the Caſe, may appear to thoſe who are the leaſt acquainted with this Part of Projection; nay, it muſt be obvious to ſuch as have been ever ſo little converſant with practical Perſpective. Let any One examine his Figures, for Inſtance, the Tenth: There the Shadow of the Edge 2 2, (on the left Hand) is caſt in the Direction 2 a; now as the Line 2 a is not drawn parallel to the Horizontal-Line, it will tend to a Point in the Horizontal-Line; and the Shadow of the oppoſite parallel Edge 8 d, ſhould likewiſe tend to the ſame Point, becauſe theſe Lines are the perſpective Repreſentations of two parallel Lines, *viz.* 2 2 and 8 d projected on a horizontal Plane: But the Line b d is parallel to the horizontal Line, and is below the Seat d of the Edge d 8, and therefore b d is neither the Shadow of d 8, nor of the parallel Edge 8 8. In like Manner the Shadow a b of the Edge 2 8 ſhould tend to the ſame Point (*viz.* Z) as 2 8; but this alſo is drawn at Random, and by that Means the Edge b d of the Shadow is made longer than a 2, though it repreſents a Line of the ſame Length as a 2 ſeen at a greater Diſtance; ſo that conſequently, the whole Shadow is as falſe as Lines can form it. And by examining the other Shadows in Mr. *Ware's* Performance, we ſhall find every one of them equally erroneous with this here remarked.

Fig. 10. }
N°. 1. }

If any one ſhould think that we extend our Criticiſm too far, as Mr. *Ware* hath not even mentioned the Perſpective of Shadows, he is, it is preſumed, miſtaken; becauſe Errors of this kind are unpardonable, when a Tranſlator either attempts to correct or make Additions to his Author. For what End can be propoſed by it? Perhaps it was intended to convey ſome imaginary Inſtruction, or to pleaſe the Eye of his Reader. But ſurely he, who knowingly endeavours to impoſe on any Man's Senſes in order to miſguide his Underſtanding, deſerves Reprehenſion; and he, who ignorantly doth ſo in things of this nature, muſt infallibly be contemptible. Nor hath this trite Excuſe (ſo frequently made uſe of to palliate Ignorance) "'Tis a Matter of "no Conſequence, 'tis a Thing never wanted, and therefore not worth Notice," either Modeſty or Senſe in it; becauſe this preſuppoſes One's own Judgment to be preferable to that of others, and becauſe, the moſt Ignorant may produce the ſame kind of Plea, for their want of Capacity to underſtand ſuch Things as might be of the utmoſt Conſequence to themſelves, and to thoſe they pretend to inſtruct.

TAYLOR.

To put a ſquare Well into Perſpective when one Side is parallel to the Picture, and placed ſo as to be directly under the Eye.

Fig. 10. } N°. 2. HERE 1 2 is the Width of the Bottom, and 1 4 is given for the Height. From 1 and 2 erect the Perpendiculars 1 4, 2 3; draw 3 4 parallel to 1 2; from 3 and 4 draw Lines to C, and from 3 draw a Line to H; then draw 75 parallel to 3 4; ſet off the Thickneſs of the Well from 3 to 6, and draw a Line from 6 to C; do the ſame on the other Side, and draw 8 C; and from where thoſe laſt Lines cut the Diagonal 3 7, draw Lines parallel to 75, which finiſhes the Thickneſs of the Wall or Kerb, and completes the Figure.

IF the Figure is to be of any particular Dimenſion, that Dimenſion muſt be ſet upon the Bottom of the Picture, as A B; and the Diſtance it is to ſtand from the Bottom of the Picture, is to be found in the ſame Manner: Thus A 9 is the propoſed Diſtance; draw 9 H cutting A C in 1, then does A 1 repreſent the Diſtance A 9.

I HAVE given in this Example every Line and Point for determining the Shadow; which makes an Addition of five Lines; but were they omitted there would be no more than three Lines required in the Operation, excluſive of thoſe which are a Part of the Object, *viz.* the horizontal Line H C, and the Lines 3 H and 9 H.

THE next Chapter of *Sirigatti's* exhibits an octangular Well in Perſpective. Chapter the nineteenth begins with the Perſpective of Stairs; and he has given us ſeven Examples of this kind, three of which will be ſufficient for our Purpoſe.

SIRIGATTI.

To exhibit the perſpective Appearance of ſquare Steps, when ſeen directly before the Eye, and under the horizontal Line.

Fig. 11. } N°. 1. DRAW half the Plan of the Steps X as before, and from thence make the Profile Y; then extend the Threads from D and L, and get the ſeveral Breadths and Heights on the Section-Line BC; finally transfer theſe Breadths and Heights as before directed, and then join the ſeveral Lines; which will complete the propoſed Repreſentation.

TAYLOR.

To put the ſame Figure into Perſpective.

Here 1 2 is the Length of the firſt Step, 1 3 the Height, and 3 4 the Width of the Step; which is ſufficient for completing the whole Repreſentation, as in the Figure. Fig. 11. N°. 2.

The twentieth Figure exhibits the Perſpective of Steps, open on two Sides; and the next Figure a Flight of Steps aſcending between two Walls; the next, ſuch as have their Aſcent on one Side only; and the next is of Steps aſcending towards the Eye. All theſe Examples being Repetitions of Things extremely eaſy, and done by one and the ſame Method, they may therefore be omitted.

SIRIGATTI.

To put Steps into Perſpective when ſeen ſideways and deſcending towards the Eye.

Describe the Plan X as far from the Ground-Line 1 L as the Steps are ſuppoſed to be ſideways from the Eye, and draw the Profile as in the Figure; then find the ſeveral Heights and Widths, and by transfering them ſucceſſively as before, finiſh the Repreſentation. Fig. 12. N°. 1.

TAYLOR.

To put Steps into Perſpective when ſituated as thoſe in the laſt Figure.

Let 1 3 be ſet upon the Bottom of the Picture for the Width of the Steps: From 1 ſet off the Diſtance 1 2 of the firſt Step: From 1 erect the Perpendicular 1 5, and ſet the Height of the ſeveral Steps upon it; then by Means of C and H the whole may be completed. Fig. 12. N°. 2.

The laſt Chapter of *Sirigatti* upon the Perſpective of Stairs, contains an Example of thoſe which are called winding; and for his

Method of producing them, I refer the Reader to the Book; where he will find (if he attempts to draw them by the Directions there given) a ſufficient Number of Points to exerciſe his Patience, and ſuch a Confuſion of Lines as will lead him into as puzzling a Maze Fig. 13. as he can wiſh for. I have therefore put this Example into Perſpective upon our Principles, which requires no more than two Lines and nine Points, excluding thoſe which make a Part of the Repreſentation. I have alſo given the Projection of the Shadow of all the Stairs, by means of the Point S and L; which it is impoſſible to perform but on the Principles of Dr. *Taylor*: And ſince the Perſpective of Shadows, is, in many Caſes, as neceſſary to be known, as the Perſpective of Lines and Planes; therefore *Sirigatti*'s Book, is, in this reſpect alſo, very deficient, and by no means calculated for the Arts of Deſign.

THE twenty ſixth Chapter begins with the Perſpective of Arches. In order to render the Operation ſtill eaſier, the Mouldings proper to the Baſes and Capitals are omitted: And as this Figure is ſuppoſed to be placed directly before the Eye, therefore one Half of the Plan (as has been ſhewn many Times before) will be ſufficient.

SIRIGATTI.

To put Arches into Perſpective when the Point of Sight is in the Middle.

Fig. 14. N°. 1. DRAW the Profile and half the Plan, and extend the Threads from D and L, which will ſucceſſively give the Heights and Breadths upon the Section Line B C; then tranſfer theſe ſeveral Meaſures to Figure Z, as before directed to the right and left, beginning with thoſe Parts that are neareſt to the Eye; and finally, draw Lines ſo as to join the correſponding Points; which will finiſh the Pilaſters. For the Arches (ſee Fig. 14, N°. 2.) draw a Line from the Tops of the Pilaſters and biſect thoſe Lines, as in the Figure; then will 1, 3, be the Centers of the Arches, *&c.*

TAYLOR.

TAYLOR.

To put an Arch, when ſeen in Front, into Perſpective; with its Shadow as projected by the Sun.

Fig. 14. N°. 2. UPON the Line AB is put the Meaſures for the Width of the Arch and the Pilaſters; on the Line AD is put the Heights for the Pilaſters, Baſes and Capitals, as alſo the Height ED of the Arch. Then C being the Center of the Picture, and H the Diſtance of the Eye; every Point and Line may be found from thence, and the Repreſentation compleated as in the Figure.——The Shadow vaniſhes into the Point L.

As this Figure was placed directly before the Eye, therefore our next ſhall be on one Side of it, which will alſo be an Example for ſtraight Mouldings. But we muſt obſerve that there are four Chapters more by *Sirigatti* upon the Perſpective of Arches, *viz.* Chapter 27 exhibits two Arches like the former, in an oblique View; Chapter 28 has two Arches or Doors, the one placed to the right, the other to the left. Chapter 29 contains an Example of groined Arches, with the Point of Sight in the Middle; and Chapter 30 exhibits groined Arches placed on one Side of the Eye.

SIRIGATTI.

To exhibit the perſpective Appearance of the Tuſcan Pedeſtal

Fig. 15. N°. 1. HERE we are directed firſt to delineate the Profile upon the Ground-Line, with all its Members in juſt Proportions; and then to form the Plan as far from the Ground-Line, as the Object is required to appear ſideways of the Eye. After this is done, then by extending the Threads to the ſeveral Parts of the Plan and Profile we ſhall get the apparent Heights and Breadths on the Section-Line; which being transferred to A, *&c.* will produce what was required.

TAYLOR.

To put a Tuſcan Pedeſtal into Perſpective in the above Situation.

Fig. 15. N°. 2. LET AB be the Width of the Plinth; A 1 its Projection; and AD the Height of the whole Pedeſtal properly divided for the Heights of the Mouldings, *&c.*——By the Points C and H the whole is to be completed, with no more Lines than in the Figure.

SIRIGATTI.

To exhibit the perſpective Appearance of the Tuſcan Baſe.

Fig. 16. No. 1. DRAW out the whole Baſe Y above the Ground-Line, and under it half the Plan X; then from the Center of the Semicircle deſcribe the greater Semicircle for the Projection of the Torus, and the leſſer Semicircle for the Projection of the Shaft of the Column, and the leſſer Semicircle but one for the Foot of the Column: Draw alſo two other Semicircles, anſwering to different Quantities of the Torus, as in the Figure. This being done, divide the outer Semicircle into equal Parts, and from every Point of theſe Diviſions draw Lines to its Center, which will divide the other Semicircles into an *equal Number* of proportionable Parts; then from the Points in the ſeveral concentric Semicircles draw Lines perpendicular to the Bottom of the Profile, which will cut the right Lines of the Baſe, according to the Circles taken from them; and theſe Points ſhould be marked with numerical Characters to diſtinguiſh them.

WE are next directed to fix the Threads at the Points D and L, as in the former Examples; then to take the Heights and Breadths of the ſeveral correſponding Points on the Section-Line, and tranſfer them to the right and left, as before directed; and then by joining Lines to theſe Points neatly by Hand, the Repreſentation is to be completed.

N. B. In this Example *Sirigatti* tranſfers the leſſer Circle firſt, which is to repreſent the Bottom of the Column, and ſo proceeds downwards. *

TAYLOR.

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* Not the leaſt Regard is had either to the Diſtance or Height of the Eye, in this Figure; and even his own Rule is not followed, nor the leaſt Apology made for deviating from it. But the Reaſon is obvious, becauſe here *Sirigatti* found himſelf involved in a Difficulty, which his Rules were not able to lead him out of. For firſt the greateſt Dimenſions of the whole Column would be its Height (we ſuppoſe that this and the following Figure, which is a Capital of the Tuſcan Order, are to ſerve as a Direction for the whole Column) and therefore had he taken his Height and Diſtance for the Eye from hence, it would not have anſwered the preſent Purpoſe, *viz.* for producing the Baſe only. And ſecondly, in Caſe more Columns than one were to be put into Perſpective, then again, this his Rule would miſlead him, and unavoidably be productive of ſhocking Deformities. And I think we may obſerve, that if ſo many Lines and Points are neceſſary for the producing only ſo ſimple an Object as the Tuſcan Baſe, what intollerable Confuſion muſt be the Conſequence, if we would repreſent a whole Building in Perſpective; eſpecially if decorated with Columns, or other architectural Ornaments: Which will be very obvious in the next Example?

TAYLOR.

To put a Tuſcan Baſe into Perſpective.

In this Figure AB is given for the Length of the Plinth, and E is the Height of the Baſe and the Projections of the ſeveral Mouldings; C is the Center of the Picture, and CL its Diſtance, and 1 is the Point by which two other Semidiameters of a Circle are to be found. From thence the whole Repreſentation may be drawn to great Exactneſs, and with the utmoſt Facility, as is evident by the Figure; where every Line and Point is drawn, and not one Thing omitted which is uſed in the Operation. Fig. 16. N°. 2.

SIRIGATTI.

To put a Building into Perſpective.

Here alſo, the Profile of the Building is drawn on the Ground-Line, and half the Plan under it; then by Means of the Threads at D and L the ſeveral Meaſures for the Heights and Breadths are to be tranſpoſed as before. Fig. 17. N°. 1.

N. B. As there are ſuch a Multiplicity of Lines in this Figure, I have omitted the perſpective Appearance; which would only have added to the Confuſion.

TAYLOR.

To produce a Building in Perſpective.

To draw any perſpective Repreſentation of this kind, and when ſituated in this manner, nothing more is required than the ſetting off the ſeveral Heights and Breadths of the Building; the firſt of which are to be put upon a Line drawn perpendicular to the Horizontal-Line (which repreſents the neareſt Corner of the Object) as the Line 1 5; and the latter are to be placed upon a Line drawn parallel to the Horizontal-Line, as 1 4: Then by means of the Center of the Picture C, and the diſtance of the Eye D, the whole Repreſentation may be drawn, without making uſe of any more Lines than in the Figure. Fig. 17. N°. 2.

Now by this Method, there are only five Lines required to be drawn, excluſive of thoſe which make a Part of the Object, and every Line is produced to its true vaniſhing Point. But by *Sirigatti's* Method, there are above two hundred Lines (for his Threads are equivalent to Lines) excluſive of the perſpective Repreſentation itſelf, which will greatly add to the Number; and what is yet worſe, the Object, when thus produced, is as falſe, as Lines drawn by a *Rule* can well make it: For in the Original by *Sirigatti,* there are not three of the oblique parallel Lines which will meet in the ſame Point; and Mr. *Ware* has very faithfully copied, not only in this Place, but in moſt of his Figures, all the *Errors* in the Original.

The laſt Figure which I ſhall produce from *Sirigatti,* is the Tetrahedron, the ſimpleſt of the five regular Solids, as it conſiſteth of only four equilateral triangular Faces. And here this *learned Italian Author* hath given a farther Specimen of his mathematical Knowledge, and his *Tranſlator* has as *learnedly* communicated it to the *Engliſh* Reader.

SIRIGATTI.

How to produce the perſpective Repreſentation of an open equilateral Pyramid.

Fig. 18. N°. 1. Draw the Triangle 1 2 3 upon the Ground-Line, and alſo another within it for the Thickneſs of the Sides; then underneath the Profile Y draw half the Plan X, and let the Joinings be marked, as in the Figure. Having made theſe Preparations, and fixed the Threads at D and L, the ſeveral Heights and Breadths are to be transferred, *&c.* as in the former Examples.

Now that this whole Operation is wrong from Beginning to End, will be evident to any One who is acquainted with the Conſtruction of theſe kind of geometrical Figures: For how can the Plane which paſſes through the Middle of the Body and determines its Height, be an equilateral Triangle built upon the Line 1 2? for this Plane muſt paſs through one Edge of the Tetrahedron, and through the Middle of the oppoſite Face, and conſequently the Plane 1 2 4, will be the Plane that cuts the Solid perpendicularly into two equal Parts; one of whoſe Sides 1 4 is equal to 1 5, and the other Sides are each ueqal equal to 12: And therefore, the Plane 123 by *Sirigatti* is not only much too low, but it alſo places the Apex, or Top 3, too far from the Section-Line; and by this means all the Heights taken from the Section-Line will be falſe, and conſequently the Repreſentation will be falſe alſo. *

TAYLOR.

A regular Tetrahedron in Perſpective.

Fig. 18. N°. 2. As theſe ſort of Objects would introduce the Perſpective of inclined Planes, I ſhall therefore omit the Operation by which this Figure was produced. But ſince this kind of Perſpective is as eaſy to be underſtood, and as readily applied to Practice as that we have been conſidering throughout this Work, the Reader may be aſſured, that the Knowledge of this Part of the Art may be acquired with the utmoſt Facility.

THE nineteenth Figure is deſigned as a Puzzle for thoſe, who are Declaimers againſt our Manner of drawing Objects in Perſpective; for it is preſumed, they cannot be truly produced or demonſtrated upon any other Principles. The Figures are all very ſimple, being no other than Cubes joined into the Forms of double Croſſes, and ſeen in different Poſitions, and at different Diſtances: That at A repoſes on three Corners; that at B is ſeen above the Eye; that at C ſtands perpendicularly on one Corner; thoſe at D and E are placed upon Sticks fixed in the Ground, one of which comes towards the Eye, and the other leans from it: And it is to be moreover obſerved, rhat they ſeverally repreſent an Object exactly of the ſame Dimenſions.

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* By comparing this with the next Figure, any one may have a convincing Proof of the *Excellence and Utility* of *Sirigatti's* Method of Perſpective; for ſome Parts of the Tetrahedron which are ſuppoſed to be near, are drawn leſs than thoſe which are farther off; and others are repreſented by parallel Lines, though ſuppoſed to be ſeen at different Diſtances. Had Mr. *Ware* known how to put only this ſimple Object into Perſpective upon true Principles, he would never have given him-ſelf the trouble of publiſhing the Tranſlation of a Work which does not contain one true Principle (as *Sirigatti* has managed it) but is thoroughly diveſted of all mathematical Data, and contrary to ‡ 'Squire JOHN *Ware's* Promiſe, and our Expectation, hath not even a ſingle Figure that is truly drawn, or which diſcovers the laſt *Taſte* or *Elegance*.

‡ *See the Preface, Page* 3.

The twentieth Figure is another Example with the Additions of the Shadows from the ſeveral Objects truly projected: And it is as impoſſible to perform this Operation without the Knowledge of Dr. *Taylor's* Principles, as it will be for a Man to produce a complete Piece of Architecture without knowing the common Principles of *Euclid.*

Having now completed all that was propoſed, in regard to Mr. *Ware's* Tranſlation of *Sirigatti's* Perſpective, it may be neceſſary to inform our Readers, that there are many more Examples in that Author than have been here produced; but ſince the remaining Part of thoſe Figures are only farther Illuſtrations of the ſame Rule, they were therefore omitted.

And it may be requiſite alſo, to ſhew, in ſome meaſure, wherein conſiſts that Difference which makes Dr. *Taylor's* Principles ſo much ſuperior to any which were ever made public before his Time. And firſt, he conſidered that all Planes, as Planes, were alike in Geometry, and therefore, did not, as all the Authors before him had done, confine his Rules to the Horizontal-Plane only; but made them general, ſo as to affect every ſpecies of Planes and Lines, whether they were parallel to the Horizon or not; and by that means his Principles were made univerſal. Secondly, from the Simplicity of his Rules the whole tedious Progreſs of drawing out Plans and Elevations for any Object is entirely rendered uſeleſs, and therefore avoided; for by this Method, not only the feweſt Lines imaginable are required to produce any perſpective Repreſentation, but every Figure thus drawn, as was obſerved before, will bear the niceſt mathematical Examination. Thirdly, this Syſtem is the only one calculated for anſwering every End of thoſe who are Practitioners in the Arts of Deſign; becauſe from hence they may be enabled to produce the whole, or only ſo much of an Object as is wanted, and by fixing it in its proper Place, may determine its apparent Magnitude in an Inſtant: It explains the Perſpective of Shadows; a Part of this Science, of which the World before his Time, were almoſt totally ignorant, although an eſſential part of practical Perſpective. And laſtly, the Reflexions of Objects from poliſhed Planes, together with what Dr. *Taylor* calls the inverſe practice of Perſpective, are very uſeful Additions, and not to be found in any other Authors.

AND theſe Obſervations are moreover intended as an Anſwer to any Remarks that may be made on what I have ſaid ‡ in favour of *Vignola's* Perſpective; for let it be remembered, that I referred to the Time in which that Book was publiſhed, without the leaſt Intention of recommending the Rules contained in it as the moſt perfect, or of bringing them in Competition with that far more ſimple and comprehenſive Syſtem eſtabliſhed by Dr. *Taylor*. Thus, the ſame Reaſons might induce me to commend the Ingenuity and Knowledge which *Vignola* and *Danti* have ſhewn in what they have advanced upon Optics, in the Book referred to: Though no one could reaſonably infer from thence that I meant to place it in Competition with that incomparable Syſtem, eſtabliſhed upon a mathematical Baſis, and an almoſt Infinity of Experiments, by our immortal *Newton*; who it is well known, was as ſingular as Dr. *Taylor*, in removing the Rubbiſh from Antiquity, forcing up deep-rooted Prejudices, and eſtabliſhing ſuch ſolid Philoſophy, as muſt remain unſhaken till Senſe, Genius, and Learning ſhall be driven from amongſt Men; or till they are made to yield a kind of paſſive Obedience to Ignorance and Barbariſm.

Now ſince all the Schemes, which Mr. *Ware* has publiſhed from *Sirigatti*, are ſimple and eaſy to be reduced into Perſpective, it is neceſſary before we wholly conclude, to produce an Example wherein thoſe Rules of *Sirigatti* are applied in a more extenſive Manner, than in the preceding Figures. Nothing can be properer for this Purpoſe, than a Print which made its Appearance not long ſince, and is called a *Perſpective View* of the *Horſe-Guards* and *Treaſury* in St. *James's Park*: For probably this Print was drawn in Conformity to the above Rules, or at leaſt is the Production of One, who plumes himſelf mightily in the Knowledge he imagines to have in thoſe Principles. And to be a little particular in pointing out the Errors and falſe Perſpective; the notorious Abſurdities, and ridiculous Attempts; which are crowded together in this Performance; is farther neceſſary, for the Satisfaction of thoſe among my Readers, who have had their Judgment and Knowledge in Perſpective called in queſtion by this pert Smatterer in the inſufficient Rules of *Sirigatti*. To begin therefore, the twenty-firſt Figure exhibits the View which the abovementioned

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‡ Page 5.

Print pretends to be a correct perſpective View of: Here the Front of the *Horſe-Guards* marked a, tends to the Point H; and the Side d of the *Treaſury* tends to the Point L, on the other Side of the Picture, but the Sides c and b of both Buildings, tend to one and the ſame Point V: From which we may remark, in a ſort of ſylogiſtical Manner,

1. THAT it hath always been a fundamental Maxim in Perſpective, to have but one Point of Sight for the ſame Picture; and the Reaſon of this is demonſtrable from the Nature of Viſion, the Principles of Optics, and the Precepts of Deſign. But in this Print there are many Points of Sight; conſequently it was drawn by Rules which were repugnant to the Nature of Viſion, the Principles of Optics, and the precepts of Deſign, and it is therefore a falſe Repreſentation.

2. ALL perſpective Repreſentations, which are not produced by a proper Diſtance of the Eye, will be abſurd and erroneous: But in this Print, no regard is had to ſuch Diſtance, and therefore this Repreſentation is abſurd and erroneous. *

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* Whoever examines the Print under Conſideration with any Degree of Attention, and ſhall compare it with the real Buildings, will find that he muſt place himſelf near the Corner of the Canal by the Sluice. From this Spot let him look directly towards *Whitehall*, and without moving his Head or Eyes, let him conſider how much of the two Buildings (*viz.* the *Horſe-Guards* and *Treaſury*) do appear to him in this Situation; for from any other Place the Originals and the Print will not have the leaſt Reſemblance, and therefore juſt ſo much of each Building as doth appear diſtinctly to the Eye from this ſuppoſed Point of View, ſhould have been repreſented in the Print, and no more.

Now it will be found, upon Experiment, that not one Third of thoſe Buildings can appear diſtinctly to the Eye from this Place, if ſeen as above directed, and as the true Rules of Perſpective require: And therefore it follows, that the Diſtance by which this Print was produced was much too ſmall, and that conſequently the whole Repreſentation muſt be falſe and abſurd. But this Wonder-working Genius did not know, I preſume *ſcientifically*, that there was an abſolute Neceſſity of chuſing a proper Diſtance; and that fixing the Eye, as it were to a Point did not, probably, appear to him at all neceſſary. But if he reflects ever ſo little, he muſt be convinced of this Error; ſince by indulging himſelf in theſe Liberties, he might, with as much Propriety, take Views from the Summit of a Hill of the Country quite round him, join them together in one Print, and then by the Dint of an happy Aſſurance, and a little Neatneſs of Engraving, endeavour to defend it as a moſt correct and extraordinary Production.

From hence then, we may partly conceive what were the Reaſons that occaſioned the falſe Perſpective in this Print, namely, by this our Author's new Method of introducing ſeveral Points of Sight in the ſame Deſign; and by working with an improper Diſtance, *i. e.* with a Diſtance not one half ſo great as was neceſſary for his Purpoſe.

3. It is alſo a Maxim in Perſpective, that the Sides of all Objects which are parallel to each other, but not to the Picture, ſhould vaniſh into one and the ſame Point; but in this Print, thoſe Sides of Objects, which are parallel to each other, do not vaniſh into the ſame Point; and therefore this Print is a falſe Repreſentation. [*]

4. If the Eye of a Spectator were ſo placed as to ſee at one View (in the real Objects) the Sides b and c of the *Horſe-Guards* and *Treaſury*, in the Manner as repreſented in the Print; then the other Sides a and d would appear parallel (like the 22d Figure) and therefore ſhould be drawn parallel in the Picture: But the Sides a and d are not drawn parallel (that is ſimilar to the Originals) but tend to two different Points, H and L; and therefore this Print is a falſe Repreſentation. [†]

5. Any two Objects whoſe Sides are joined by equal Angles, and are alike ſituated in regard to the Eye and the Picture, will have the ſame Diſtance between their vaniſhing Points. But though this Print is intended to repreſent two Buildings, whoſe Angles are equal, and whoſe Sides are alike ſituated in regard to the Eye and the Picture, yet the Diſtances between their vaniſhing Points are unequal; and conſequently this Print is a falſe Repreſentation. [‡]

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[*] The Side a of the *Horſe-Guards*, and the Side d of the *Treaſury*, are parallel in the Originals; and yet in the Print one Side tends to the Point H, and the other Side tends to the Point L; but the other two parallel Sides, *viz.* b and c tend to the ſame Point V: Which being diametrically oppoſite to every Principle of Perſpective, and contrary to the very Nature of our ſeeing Objects, the Author would do well to reconcile this ſtrange Contradiction, or elſe prove that one and one doth not make two.

[†] This is a Concluſion ſo obvious, that even a Novice in this Science may underſtand it; for all Lines parallel to the Picture muſt have parallel Repreſentations; becauſe thoſe Lines, which are ſeen in this Direction by the Eye, cannot tend to any Points upon the Picture: And this is alſo repugnant even to the Principles of *Sirigatti*.

[‡] If we ſhould allow (which it is impoſſible to do without perverting the Means as well as the End of all Perſpective) that the Principles, on which this Print was produced, were true, yet even this would make againſt its Author; ſince he muſt either acknowledge, that he made uſe of two different Diſtances for the ſame Deſign, or, that he miſtook the Equality of the Angles in the Buildings. But to be a little more particular: The Sides of the *Horſe-Guards* vaniſh into the Point H and V, and becauſe the middle Truſs of the Cupola is repreſented in the Print, as directly Fronting the Eye, therefore the Point of Sight to the *Horſe-Guards* will be in the Point 4: And becauſe the real Building is ſquare, therefore the Diſtance of the Picture, ſhould

The Specimen which this curious Gentleman has been pleaſed to give in the above Print, of his Knowledge of Light and Shadow, is very extraordinary; for to make out his imaginary Effect, he hath made a light Object appear as a dark one; & *vice verſa*. The Sun alſo is made to come on the wrong Side, *viz.* from the *North*, which ſhould (if poſſible) always be avoided; and all the Shadows are falſely projected, or rather not projected at all.

These are ſome of the many Remarks which the falſe Perſpective in this Print will admit of; and which will not appear at all exaggerated to thoſe who know the extravagant Heat with which this Juggler in Perſpective has endeavoured to defend the Principles of this his favourite Author; and the extraordinary Liberty which he hath taken with the Opinion and Works of others, who have either attempted to rectify his Miſtakes, or who have otherwiſe objected to thoſe abſurd and ridiculous Notions which he hath adopted to himſelf. He declaims againſt the Syſtem of Dr. *Taylor*, not becauſe he knows any thing of it, (for he acknowledges that he does not) but becauſe he either wants Capacity for underſtanding his Schemes, or has not examined them with that Degree of Attention which was neceſſary for his forming a juſt or peremptory Determination.

The

ſhould be equal to the Line 2 4; becauſe no other Diſtance can produce a right Angle at 2 with Lines drawn from H and V. Again, the Sides of the *Treaſury* vaniſh into V and L, and the Point of Sight to this Object is 5; and the Diſtance of the Eye will be 3 5, becauſe V 3 L muſt be a right Angle alſo. Now examine the Figure, and then the Diſtance 5 3 will be found much ſhorter than the Diſtance 2 4; and the Points V and L one Third nearer to each other than the Points V and H.

And ſince the *Horſe-Guards* is a quadrangular Building, and the Point of Sight in this Print is placed under the middle Truſs of the Cupola, that is, exactly in the Middle of the Building, therefore the Points H and V ſhould have been at an equal Diſtance from the Center 4. By this Means the Point H would have been brought nearer to 4, and the Point V would have been placed farther from it towards L. Moreover had the Diſtance for the whole Deſign been a proper one (ſuppoſe CE) and had C been taken for the right Center of the Picture, then the vaniſhing Points for the two Buildings would have been M, N; the Side a of the *Horſe-Guards*, and the Side d of the *Treaſury*, would both have vaniſhed into M, and the other Sides b and c, would have vaniſhed into N, and conſequently the Side e of the *Treaſury* would have fallen behind the Side d, and therefore could not have been ſeen at all. But perhaps our Author will ſay, that he wanted to exhibit in the ſame Print, a View of both Fronts. Very well; and ſo he might, had he either known of himſelf where to have fixed his Point of Sight and Diſtance, or could have been wrought into ſo much Humility, as to have taken the Advice of thoſe who know much better than himſelf.

The laſt Figure is a true perſpective Repreſentation of the above Buildings, on which we have been ſo long animadverting, when ſeen at a proper Diſtance. It is ſuppoſed to be taken from a Spot * where the whole View might appear to the beſt Advantage; as in this Situation the Cupola is conſiderably hid behind one of the Towers, and by that Means its diſagreeable Shape is in ſome meaſure concealed. The twenty-ſecond Figure (as was obſerved above) is drawn as the Buildings would appear, if V is conſidered as the Center of the Picture; that is, if the oblique Sides b and c tend to one and the ſame Point; and as they are made to do in the Print we have been remarking.——With this I ſhall conclude all I intend ſaying at preſent upon this Subject.

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* On the right Hand of the croſs Walk, going from the *Horſe-Guards* to the *Mall*: The Trees will indeed hide Part of the View, but that is an Accident not to be remedied. There is not any particular Spot, from whence the whole Buildings can be ſeen to any tolerable Advantage, on Account of the Trees, the Nearneſs of the Rails, and the Obliquity of the Walks, *&c.* And therefore no One can be ſuppoſed to take a true View from any Point (not even with a Camera-Obſcura) where the Buildings themſelves muſt neceſſarily appear deformed; and conſequently in drawing them truly, a proper Diſtance ought to be aſſumed.

FINIS.

ERRATA.

PREFACE, page 1. line 3. read *been univerſally*—l. 26, read *one Edition of Sirigatti*'s *Book.*

Page 2, l. 34, read *geometrical*—p. 3, l. 24, for *Rules which are* read *Rule which is*—p. 6, l. 34, for *Figures* read *Figure*—p. 17, to Note ‡ add Fig. 8, N°. 1, in the Margin—p. 19, l. 3, for *differs* read *differ*—p. 21, l. 21, for *left* read *right*—p. 24, l. 10, for *Point* read *Poiuts*—p. 29, for *rhat* read *that*—ibid, for *Object* read *Objects.*

The laſt Figure is a true perſpective Repreſentation of the above Buildings, on which we have been ſo long animadverting, when ſeen at a proper Diſtance. It is ſuppoſed to be taken from a Spot,* where the whole View might appear to the beſt Advantage; as in this Situation the Cupola is conſiderably hid behind one of the Towers, and by that Means its diſagreeable Shape is in ſome meaſure concealed. The twenty-ſecond Figure (as was obſerved above) is drawn as the Buildings would appear, if V is conſidered as the Center of the Picture; that is, if the oblique Sides b[illegible]d to one and the ſame Point; and as they are made to [illegible] Point we have been remarking.——With this I ſhall c[illegible] intend ſaying at preſent upon this Subject.

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* On the right Hand of the croſs Walk, going from the Horſe-Guards to the Mall. The Trees will indeed hide Part of the View, but that is an Accident not to be remedied. There is not any particular Spot, from whence the whole Buildings can be ſeen to any tolerable Advantage, on Account of the Trees, the Nearneſs of the Rails, and the Obliquity of the Walks, &c. And therefore no One can be ſuppoſed to take a true View from any Point (not even with a Camera Obſcura) where the Buildings themſelves muſt neceſſarily appear deformed; and conſequently in drawing them truly, a proper Diſtance ought to be attended.

F I N I S.

E R R A T A.

PREFACE, page 1. line 3. read [illegible] univerſally—l. 26, read the Edition of [illegible] Book.

Page 2, l. 3[illegible], read geometrical—p. 3, l. 24, for [illegible] read [illegible]—p. 6, l. 3[illegible], for Figure read Figures—p. 17, to Note ‡ add Fig. 8, N°. 4, in the Margin—p. 19, l. [illegible], for differs read differ—p. 21, l. 21, for eye read ſight—p. 24, l. 16, for [illegible] read [illegible]—p. 29, for what read that—ibid, for Obje& read Object.

Fig. 1.

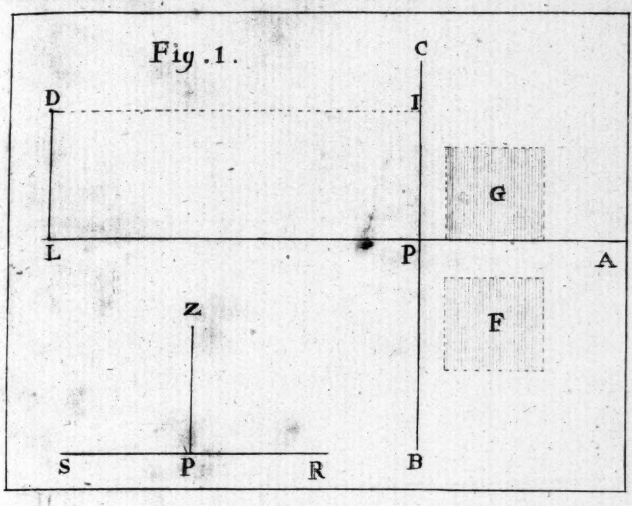

Fig. 2.

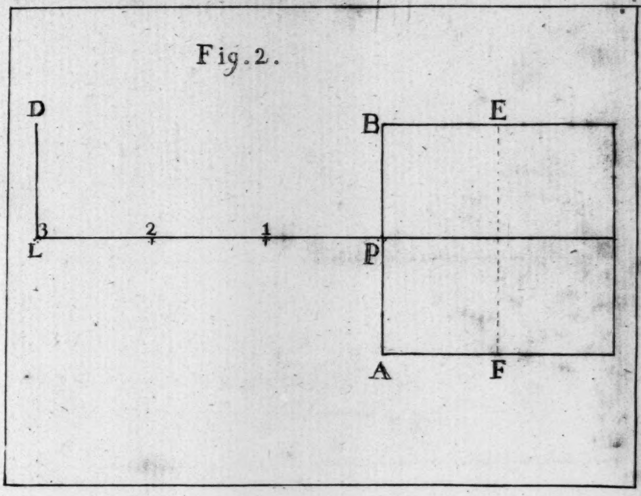

Fig. 3. N.° 1.

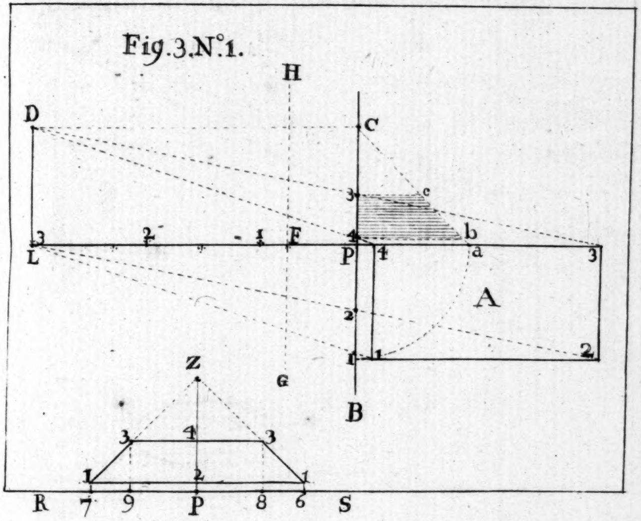

Fig. 3. N.° 2.

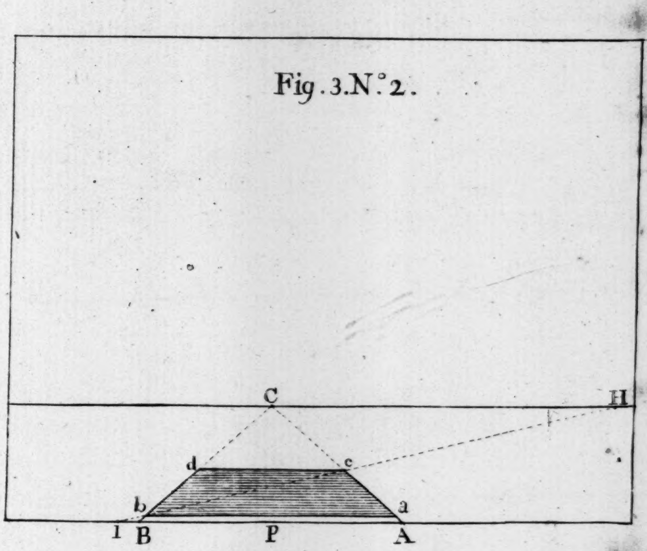

Fig. 4 N.° 2.

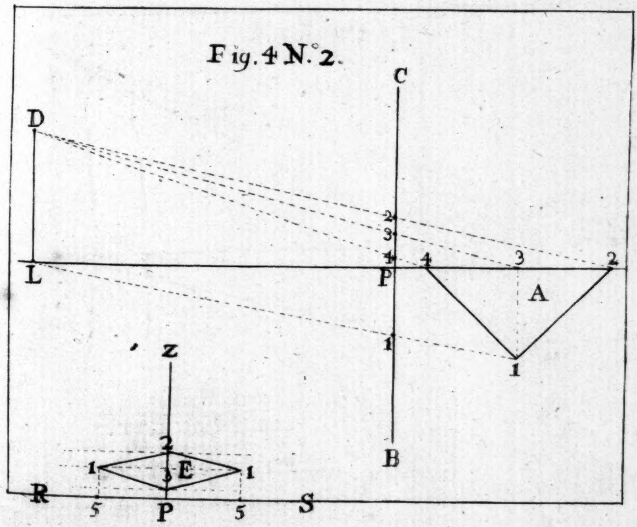

Fig. 4. N.° 2

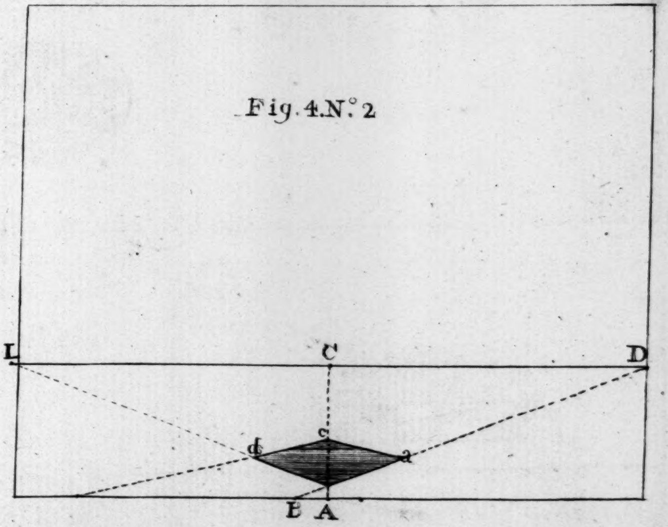

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Fig 5 N°1.

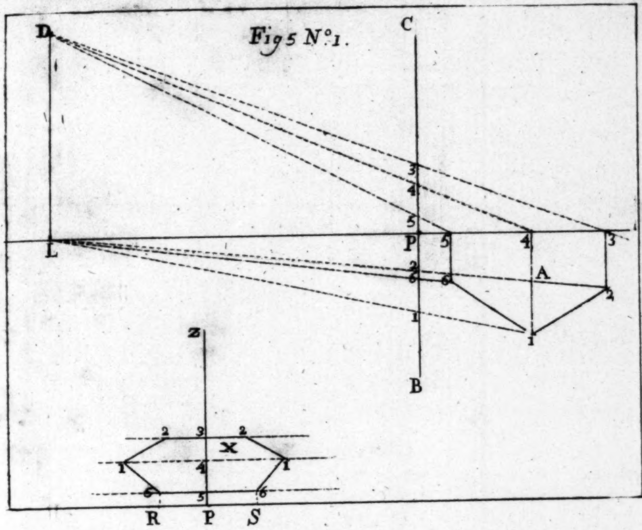

Fig 5 N°2

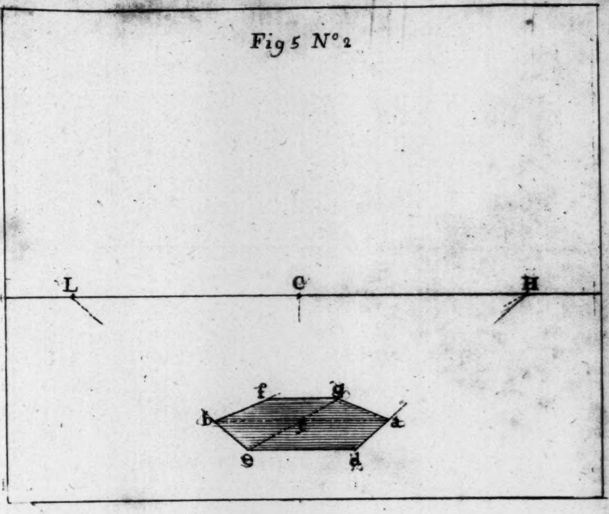

Fig 6 N°1.

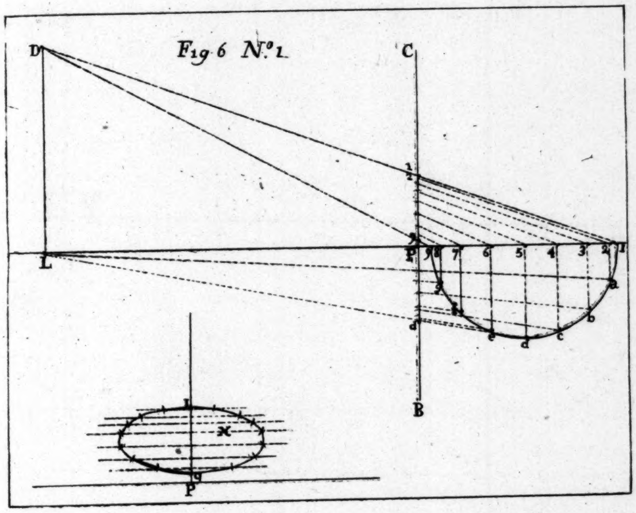

Fig 6. N°2

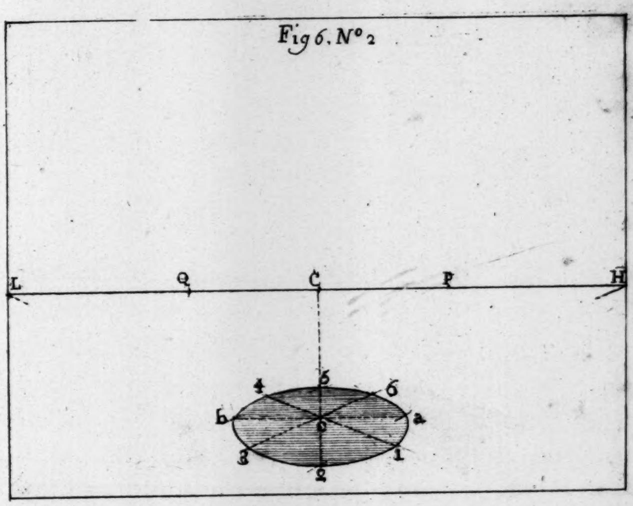

Fig 7 N°1

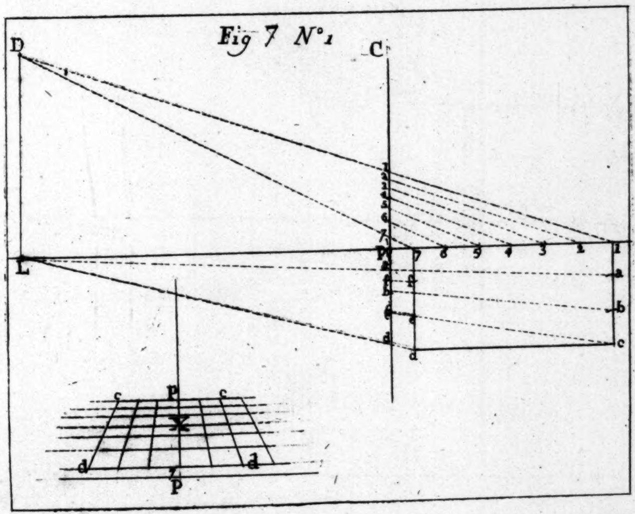

Fig 7 N°7.

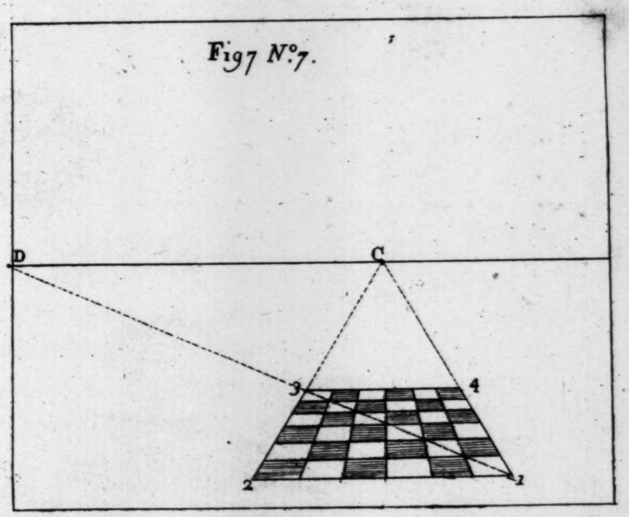

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Fig. 8. N°1

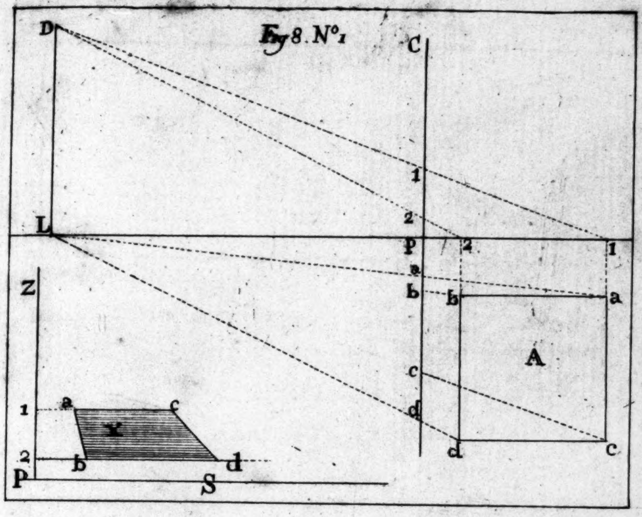

Fig. 8. N°2

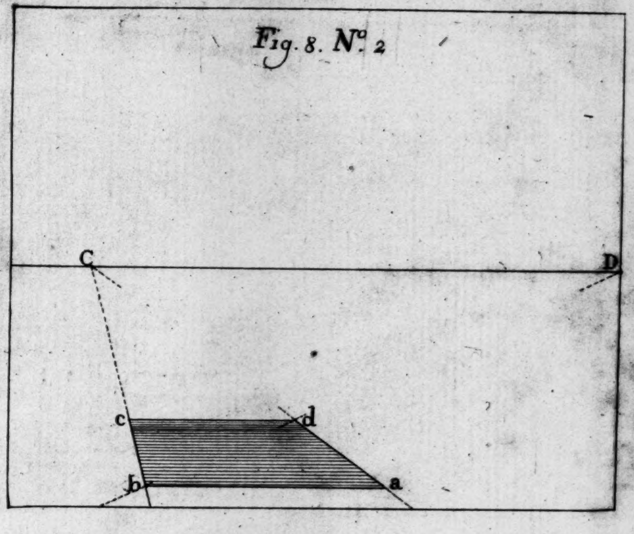

Fig. 9. N°1.

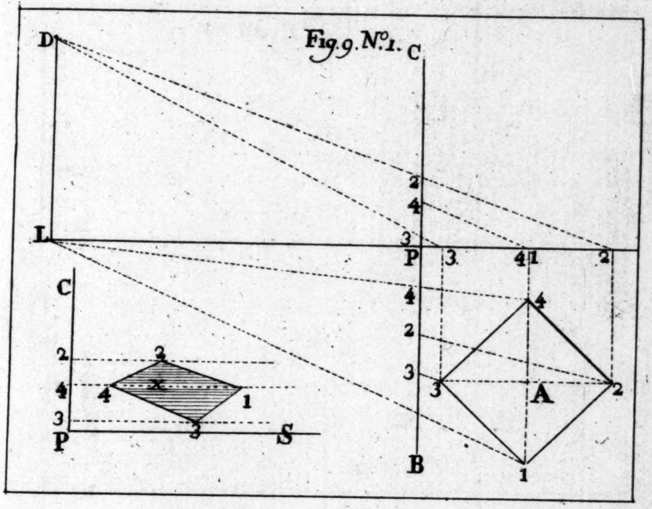

Fig. 9. N°2

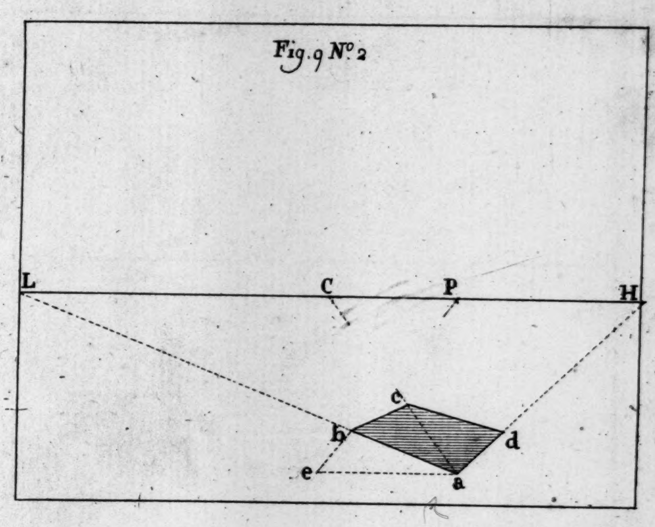

Fig. 10. N°1

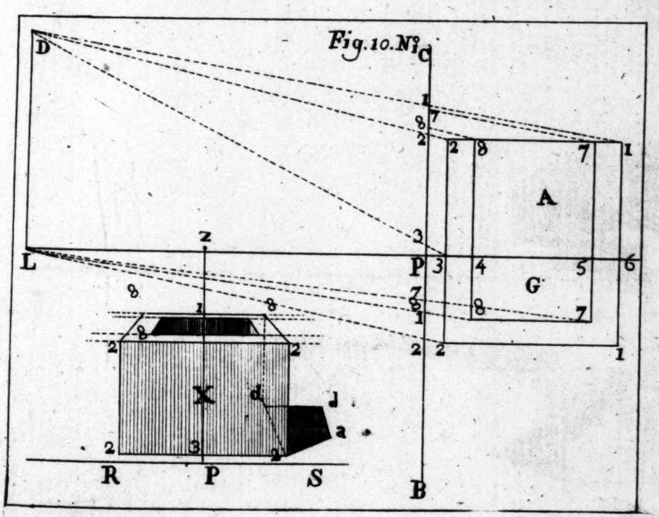

Fig. 10. N°2

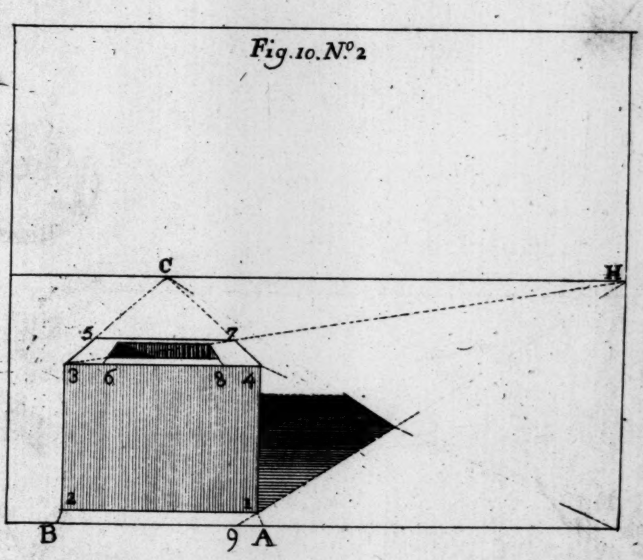

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Fig. 11. N°. 1.

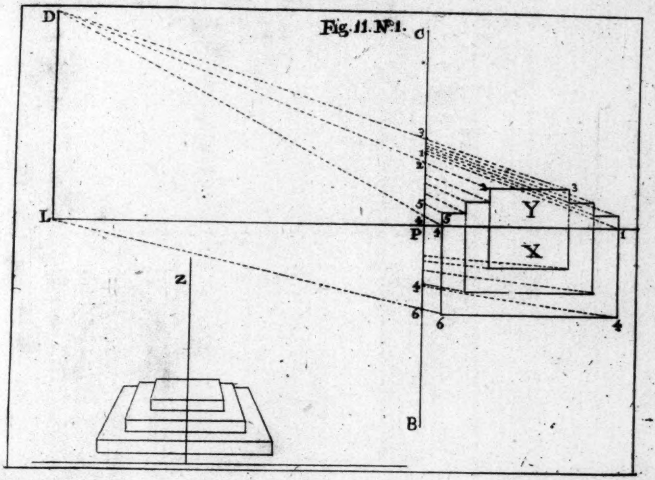
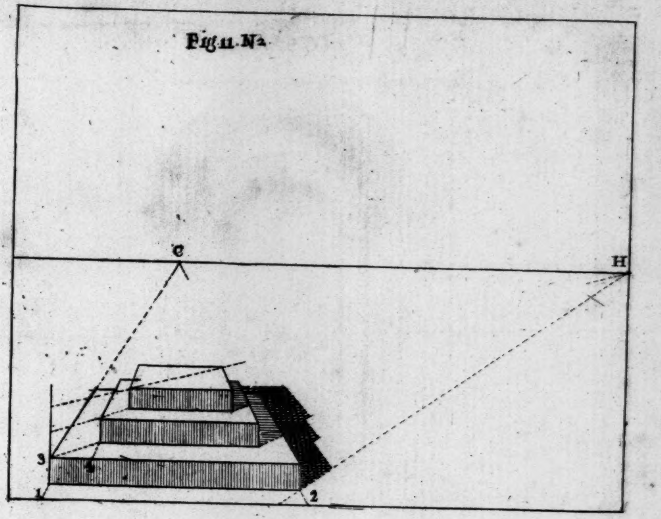


Fig. 11. N°. 2.



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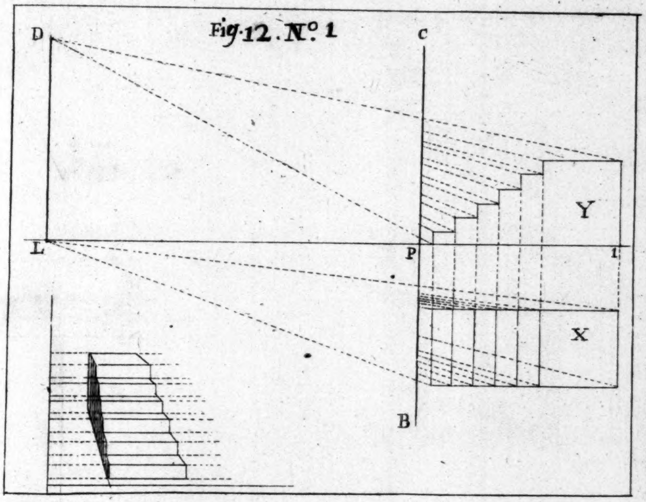

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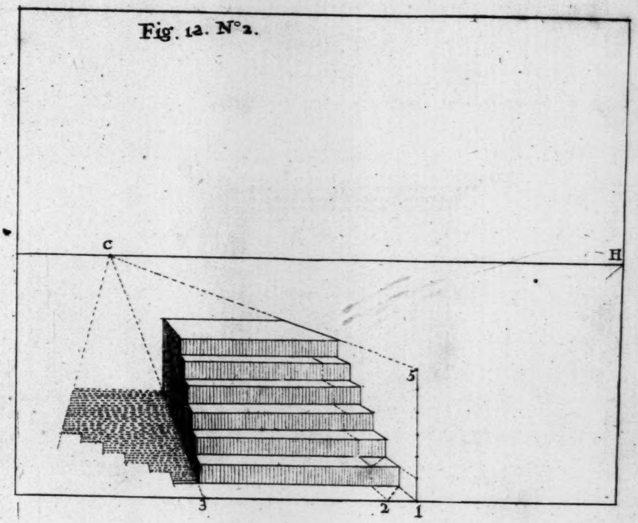

Fig. 13.

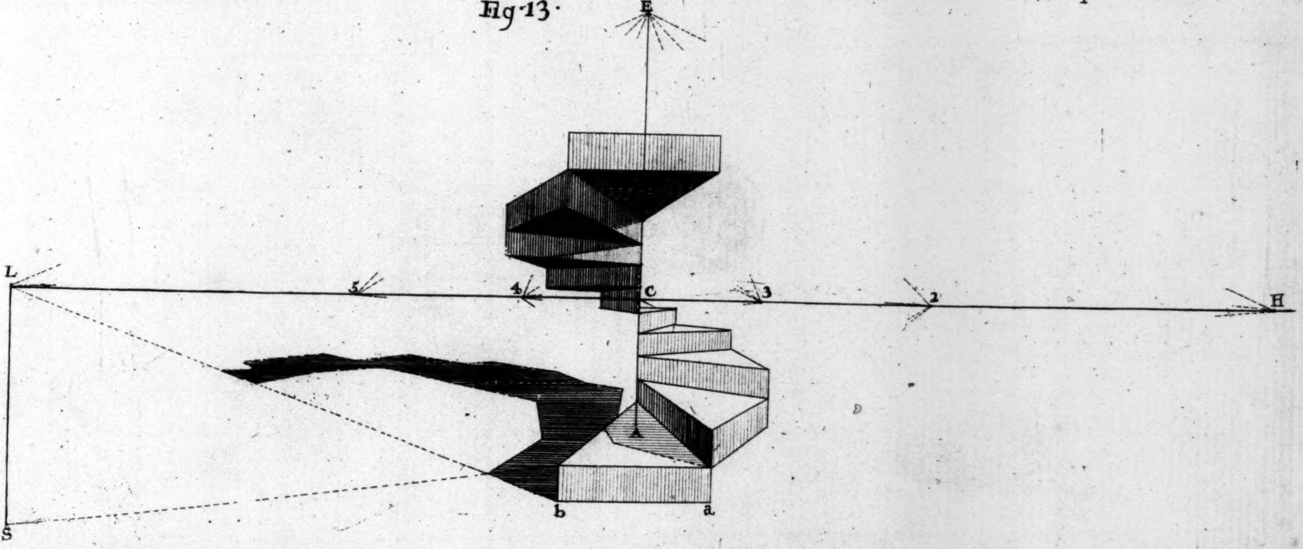

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Fig. 14. N.° 1

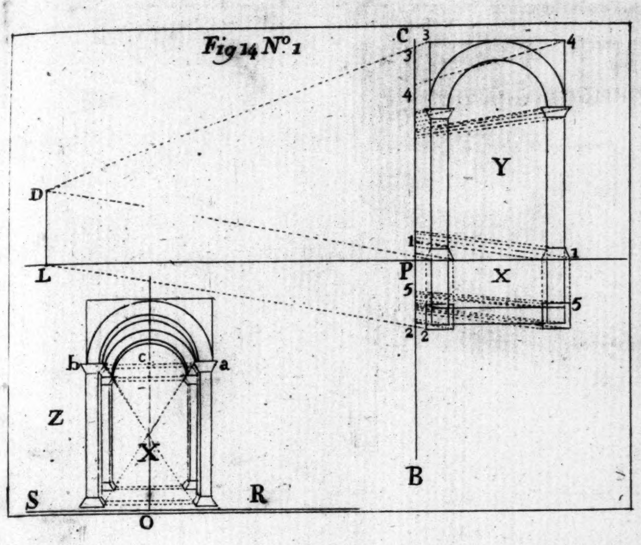
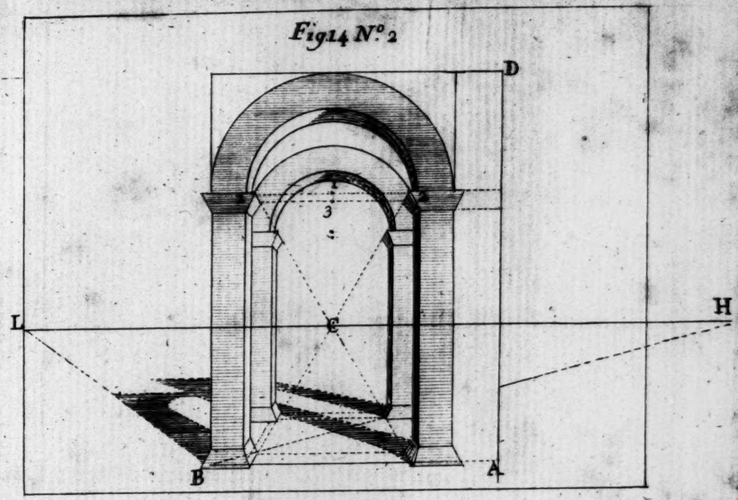


Fig. 14. N.° 2



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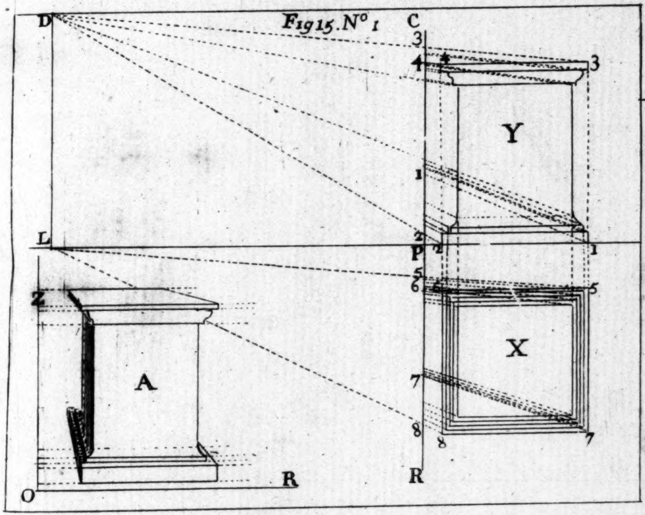
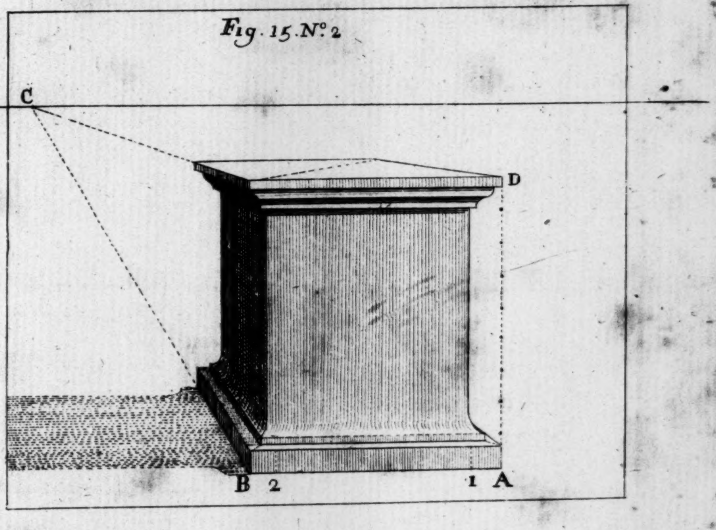


Fig. 15. N.° 2



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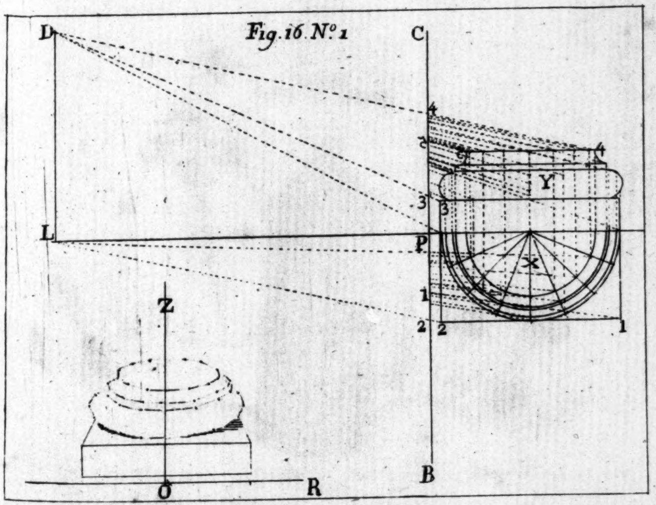

Fig. 16. N.° 2

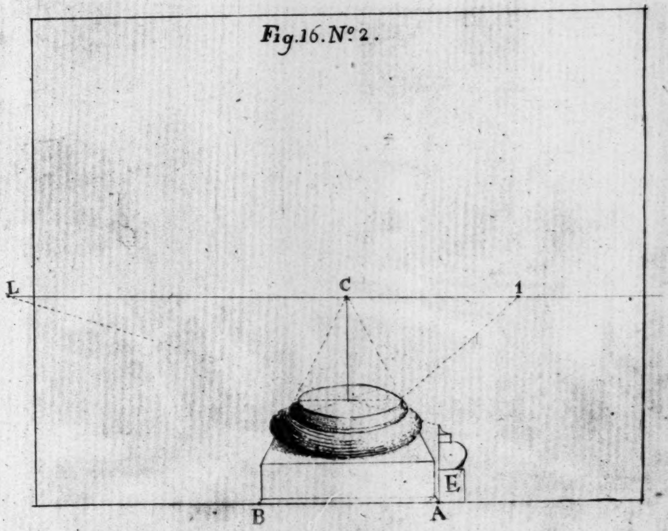

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Fig. 17. N°1.

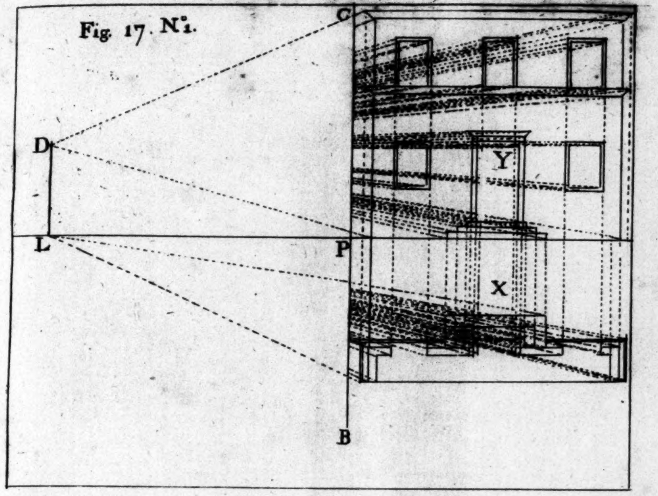


Fig. 17. N°2

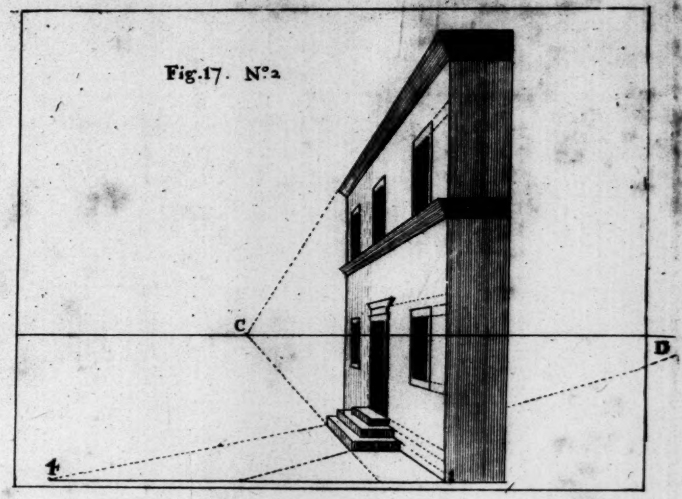


Fig. 18. N°1

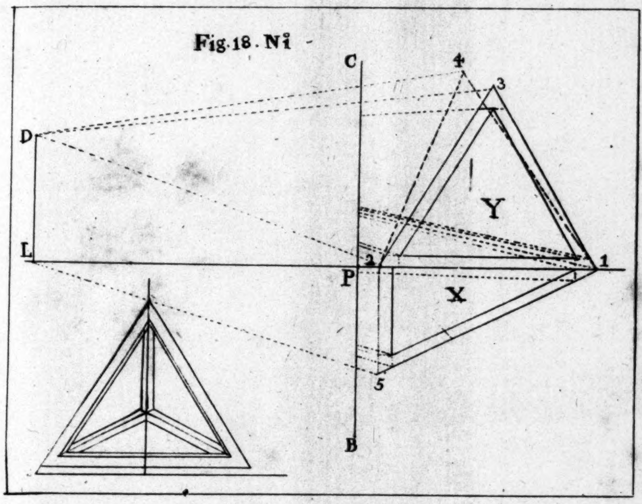


Fig. 18. N°2.

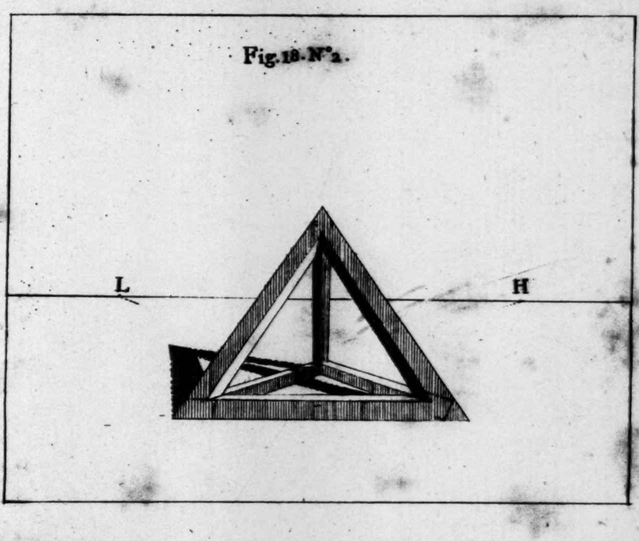


Fig. 19.

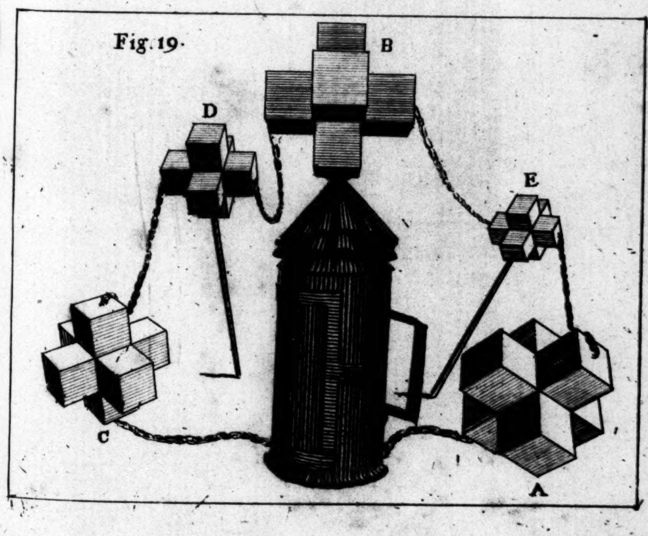


Fig. 20.

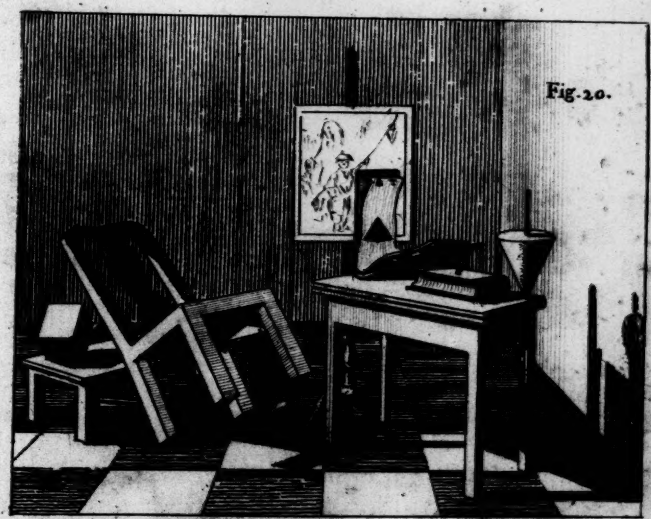
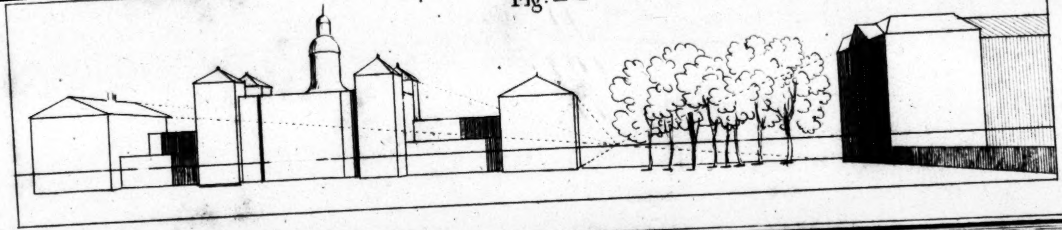
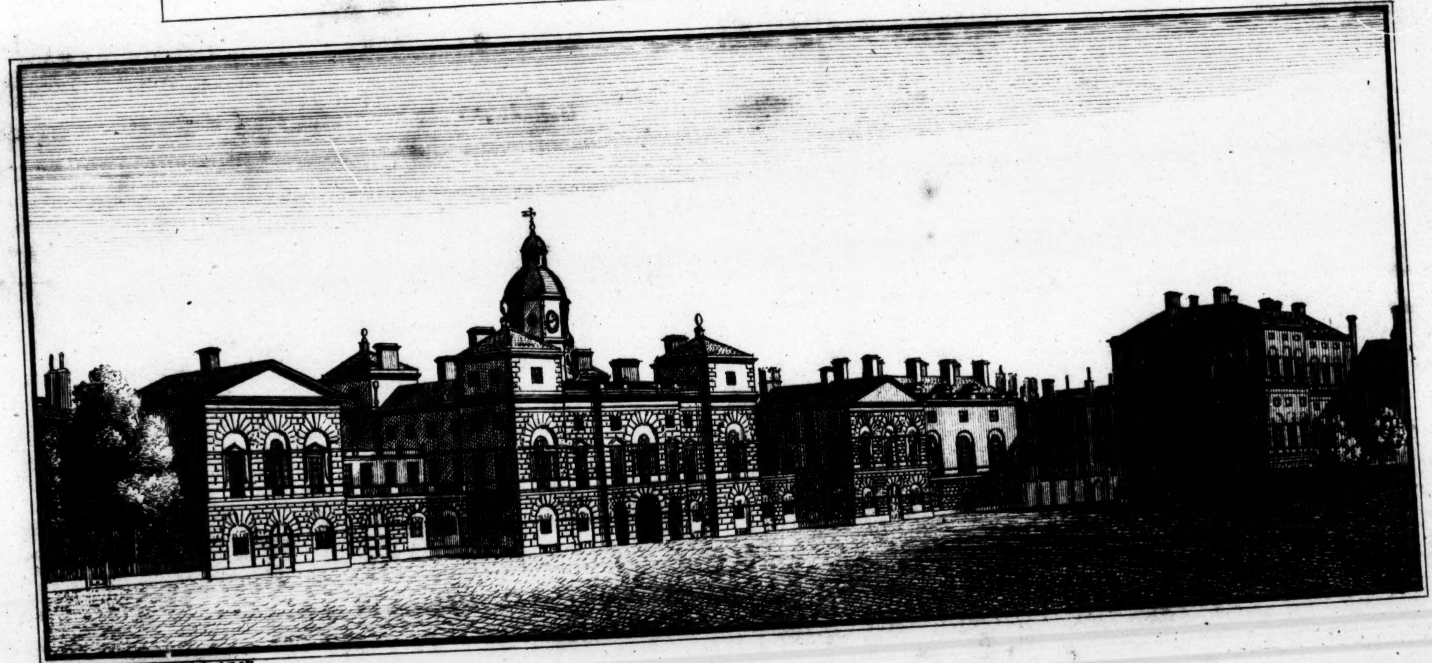


Fig. 12.





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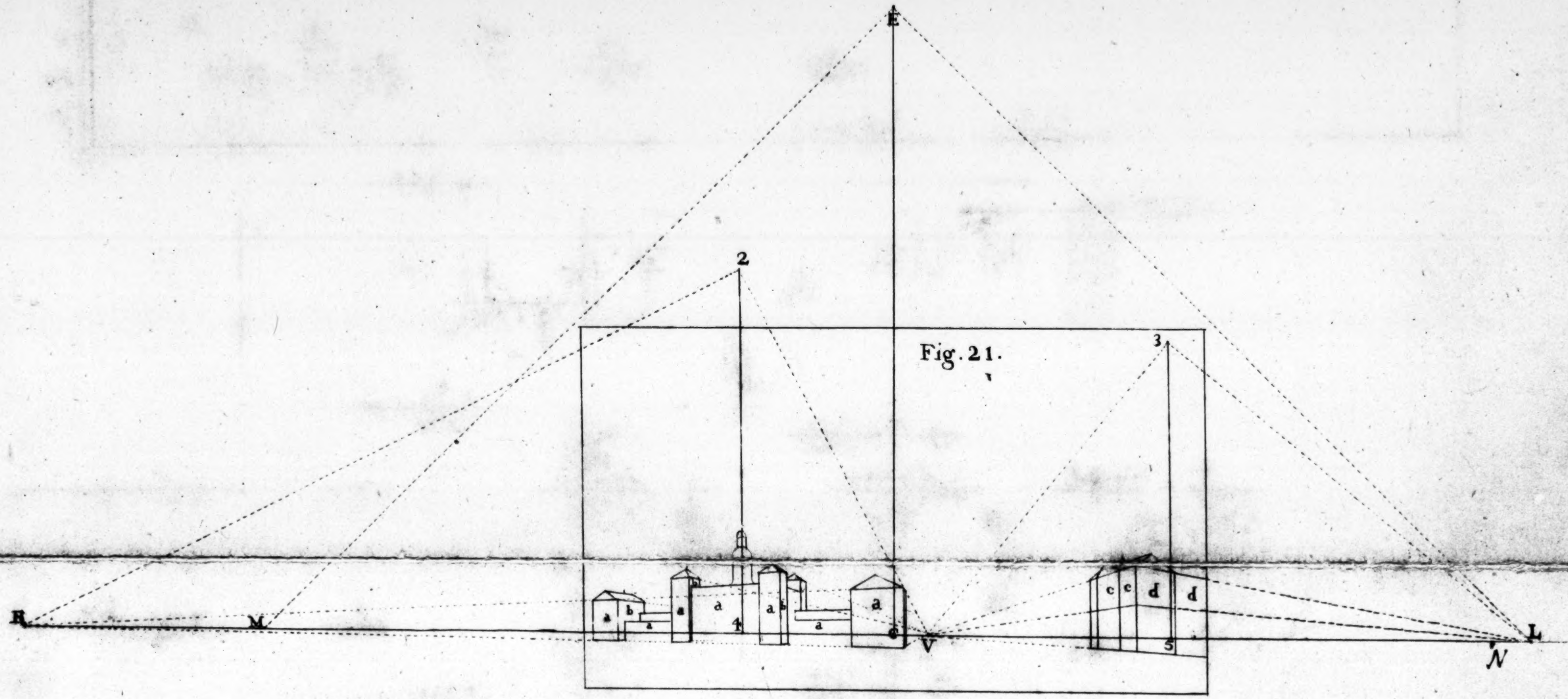

Fig. 21.

Fig. 22.